The Mining Journal
AND ATMOSPHERIC RAILWAY GAZETTE,

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 572.---Vol. XVI.] LONDON: SATURDAY, AUGUST 8, 1846. [Price 6d.

SOUTH WALES.

The KIDWELLY TIN-WORKS, close to the town; also, a VALUABLE WHARF and WATER FRONTAGE, held for 97 years, at only £4 a year.

MR. GEORGE ROBINS is instructed to submit to PUBLIC SALE, at the Auction Mart, opposite the Bank, on Thursday next, at Twelve, in One Lot, by direction of the mortgagee, under a positive power of sale, the extensive and valuable TIN WORKS, with possession, situate close to the borough town of KIDWELLY, and not far distant from the sea, Carmarthen and Swansea. They have been completed at an immense cost—are perfect in every department—admirably arranged for conducting this profitable business—"the manufacture of tin plates"—with the utmost dispatch and advantage. The buildings are numerous, and occupy a spacious area, including excellent dwellings for the proprietor and men. The machinery combines all the recent improvements for the complete success of the establishment, and the water-courses throughout the year afford ample power—though it must be conceded, that the introduction of steam could easily be accomplished, and would materially increase the capability of the works. There is an inexhaustible supply of the best coal (an important matter) close at hand, at moderate cost.

Also, a WHARF and STOREHOUSE, with frontage to the River Gwendrath, close to the bridge, and within the borough of Kidwelly, used for the shipment of goods. The proximity of the South Wales Railway, which is in rapid progress, to the works, will not only afford an easy transit for the goods, but open an access to all parts; and it is believed that, from the many advantages appertaining to these works, a more favourable opportunity for embarking in the business has never before occurred.

The premises may be viewed, and particulars had, at the inns at Kidwelly, Carmarthen, and Swansea; of Messrs. Edwards, Mason, and Co., 8, Moorgate-street; at the Mart; and at Mr George Robins's office, Covent-garden.

VALUABLE MINING MATERIALS—30-inch cylinder STEAM-ENGINE, 24-feet diameter, WATER-WHEEL, 34-feet breast, &c., FOR SALE.—TO BE SOLD, BY PUBLIC AUCTION, by Mr. EDSALL, at CHYPRAZE MINE, in the parish of ST. ENODER, on Monday, the 17th day of August inst., at Eleven o'clock in the forenoon precisely, the whole of the valuable

MINING MATERIALS,

Consisting of a 30-inch cylinder STEAM-ENGINE, 8-feet stroke in cylinder, and 7-feet in the shaft, with two boilers—one 6 tons and one 8 tons—capstan and shears, 80 fms. 5-inch capstan rope.
10 Fathoms of 13-inch PUMPS.
36 " 12-inch ditto.
16 " 11-inch ditto.
10 " 10-inch ditto.
12-inch plunger-pole and case, with stuffing-box and gland to match.
9, 10, 11, and 12-inch working-barrels.
Ditto ditto windbores.
Ditto ditto door-pieces and doors.
11-inch H-piece, 70 fathoms 7-inch rods, 46 fathoms bucket-rods, 70 fathoms flat-rods, triangles, pendulums, &c., flanch pins, rod plates and pins, 2 horse whims, pulleys, and shaft tackle complete, whim ropes, kibbles and chains, large cast-iron winch.
A 24-feet diameter WATER-WHEEL, 34-feet breast, 2 balance-bobs.
100 Fathoms large LAUNDERS, stays, &c., 3 water stamps, with frames, heads, and lifters, complete; buddles, rakes, kieves, smith's bellows and anvil, smiths' and miners' tools, picks, shovels, &c., a quantity of old timber, iron, &c.
Together with the ACCOUNT-HOUSE FURNITURE, consisting of the usual assortment of utensils, &c.

The above are well worthy the attention of mining agents, and can confidently be recommended, having been erected new within a very short period.

Dated Truro, August 6, 1846.

COPPER AND LEAD MINE FOR SALE.—TO BE SOLD, BY PRIVATE CONTRACT, the HAFODFEDDGAR MINE, in MONTGOMERYSHIRE, distant from the town of Llanidloes six miles.—The take-note of the above mine (whereby a lease for 21 years is agreed to be granted), together with a large quantity of very valuable ore, now on the premises, and which has been raised without the aid of machinery. A level has been driven upwards of 20 fathoms, and a shaft has been sunk 6 fathoms, in which the lode is 7 feet wide, producing copper of rich quality on the north side, and lead on the south side. It was lately that the working of this promising mine commenced, by persons who possess only a small capital. A little additional outlay is required to bring it into a state of returns, and the royalty agreed to be given is only 20s. per ton. The whole will be sold upon very moderate terms, and with immediate possession.—For further particulars, and to treat for the mine, apply to Mr. John Pate, grocer, Llanidloes, Montgomeryshire.

PENNANT LEAD AND COPPER MINING COMPANY.
NOW IN WORK ON THE "COST-BOOK" PRINCIPLE.

No APPLICATIONS FOR SHARES in this undertaking will be received after MONDAY, the 17th inst. Apply at the Offices of the Company, 4, Salisbury-street, Strand; or to the Solicitors, Messrs. Pocock and Marston, 10, Norfolk-street, Strand; Charles Godwin, Esq., Stock and Share Broker, 2, Royal Exchange-buildings; or James Lane, Jun., Mining Share Broker, 75, Old Broad-street, City.

HEWAS CONSOLS TIN AND COPPER MINE, Cornwall.—This MINE is divided into 1024 SHARES, of £3 each.—Deposit £1 per share.

All particulars respecting the remaining SHARES in this adventure, may be obtained on application to Messrs. Linthorne, Jones, and Co., agents to the company, 48, THREADNEEDLE-STREET, LONDON.

BANWEN IRON COMPANY, GLAMORGANSHIRE.
Capital £100,000, in 10,000 shares, of £10 each—Deposit £2 per share,
Payable on complete registration; with two calls of £2 each, beyond which no further calls will be made.

(Registered Provisionally, pursuant to the 7th and 8th Vic., cap. 110.)

DIRECTORS.

SAMUEL BOYD BARNETT, Esq., 17, Dorset-place, Dorset-square
SAMUEL KENTISH, LL.D., Llangerry, Carmarthenshire
CLAUDIUS ARMSTRONG, Esq., Pencoed-hill, Kidwelly
ALGERNON H. SWIFT, Esq., Crosby-hall Chambers, Bishopsgate-street, iron merchant
FREDERICK FOWLER, Esq., Windsor
CHARLES FREDERIC PHILIPS, Esq., Adam-street, Strand
ROWLAND JAY BROWNE, Esq., Ynysarwed, Glamorganshire, and the Inner Temple, London.—(With power to add to their number.)

BANKERS.

Messrs. Spooner, Attwood, and Co., Gracechurch-street.

SOLICITOR.

William Martin Wilkinson, Esq., 44, Lincoln's Inn-fields.

SECRETARY—Sydney Pottinger Harris, Esq.

The object of this company is to work the ironstone and anthracite coal of the best quality lying under 537 acres, (nearly one square mile) situate near to the Banwen mountains, 13 miles from Neath, and 16½ from Swansea, Glamorganshire, and in the immediate vicinity of the well-known Ynyscedwin, Onllwyn, and other highly prosperous iron-works.

The minerals, which have been surveyed by very eminent surveyors, and are proved by working in the adjoining properties to consist of four veins of coal, respectively of 4, 12, 5, and 3 feet in thickness, and veins of iron mine, amounting together to 8 feet in thickness, both the coal and iron mine crop out of the surface of the land; the coal will, therefore, be worked by level, and the mine by patching, without pits or machinery of any sort. There are cheap limestone quarries in the neighbourhood, from which the other works obtain their flux, and building stone and fire-clay are found on the property.

The estate is most favourably situated for transit, as by laying down rather less than a mile and a half of tramway (at an expense of £1200), the works will be placed in communication with the Swansea Canal, and the South Wales, Swansea Vale, and Vale of Neath Railways, and with the ports of Swansea, Neath, and Britton Ferry; there will, therefore, be the most ample means of transit to all parts.

It is proposed to erect six smelting furnaces, each 34 feet high, which will turn out at a low average of 14,000 tons of pig iron per annum, the cost of these (which may be completed within six months), with the necessary offices, including the expense of opening out the mine, the shares allotted to the lessee for his interest under the lease, and a sufficient sum in hand as working capital, will not exceed 6*l.* a share, beyond which no calls will be made. From the coal and ore cropping out on the surface, the economy of patching and level working, and the facilities of procuring limestone, iron may be made (including wear and tear of the plant and works, and the expense of management) for 2*l.* 10*s.* per ton, (see the prospectus and estimates); and reckoning a sale of the iron at 4*l.* per ton merely, (it is now worth upwards of 5*l.* per ton), the return would be above 35 per cent.; and as at the worst time anthracite pig has not sold at less than 3*l.*, which would leave a net profit of 7000*l.*, it follows that under any circumstances the return upon the capital must be very large, varying from 12½ per cent. upwards.

It is quite unnecessary to touch upon the prospect of the iron trade, as the ordinary supply is only equal to the ordinary demands, and there is an additional demand of at least 3,000,000 tons (two years' entire make) for English railways alone, hanging over the market. Indeed the dividend of 20 per cent., declared by the New British Iron Company at their last meeting (see the report in the *Mining Journal* of July 11, 1846), sufficiently shows the prosperity of the trade. The liability of shareholders will be limited by the deed of settlement, and by the incorporation of the company to the amount per share to be called up—viz: 6*l.* per share. For a more full detail see the prospectus and estimate, which may be had, where plans of the property and the minerals, surveyor's report and sections and specimens of the minerals, may be inspected.

Applications for shares, with a reference in the usual form, may be made to Mr. T. Thomas, mining agent, 90, Old Broad-street; to the secretary, S. P. Harris, Esq., at the offices of the company, 23, Threadneedle-street: and to the solicitor, W. M. Wilkinson, 44, Lincoln's-Inn-fields.

TO ENGINEERS, RAILWAY CONTRACTORS, MINING AGENTS, IRONMASTERS, AND OTHERS REQUIRING FINE GREASE for MACHINERY and AXLES of every description.—JOSEPH PERCIVAL'S IMPROVED ANTI-FRICTION GREASE is—after trials on machinery and axles of every kind where constant friction is kept up—admitted to be the most useful, economical, and best preparation of the kind ever offered to the public.

References to scientific and practical men can be given, and testimonials shown of its great excellence.—Samples forwarded on application at the manufactory, Green-street, Wellington-street, Blackfriars-road, London.

MINE MATERIALS.—I. T. TREGELLAS, Quay, TRURO presents his respects to MINERS, and begs to OFFER them the following GOODS, of good quality, and at the lowest market prices:—

IRONS, including best Shropshire Bars, extra-refined Chain Iron, Boiler-plates, Kibble-plates, Hoops, and Sheets
Steel of every description
Coals
Gunpowder and Powder Cans
Hemp and Wire Cordage
Best Scrap Chain, warranted
Kibbles and Water Barrels
Nails of all kinds
Sheet Lead, White Lead, and Red Lead
Shovels
Picks and Pick Moulds
Mallets and Mallet Iron
Saws and Hatchets
Shovel Hilts from 1s. per doz. to 5s. per doz.
Pick Hilts
Smiths' Bellows
Oils—of every kind
Grease, at the makers' prices
Fire Brick and Building Brick
Pitch, Tar, Rosin, and Roman Cement
Anvils, Vices, and Files
Leather
Grindstones
Engine Shag and Sump Stripe
Ore Ducks, Poldavy, and Sacking
Patent Felt, for covering cylinders, &c.
Patent Roofing Felt, 1d. per square foot
Lifting Jacks
Patent Fuse, Shooting Needles, and Clay Irons, and every other description of materials for general mine consumpt.

Dated Truro, April 2.

WANTED, by an experienced copper smelter, an appointment as AGENT for a COPPER COMPANY, to proceed to Chili, Valparaiso, Australia, or the United States; he is thoroughly acquainted with the entire process of smelting—from the selecting and dressing ores in the rough, to the production of refined copper: has been for many years engaged in one of the principal copper establishments in Wales, and can be most satisfactorily recommended.—Address to "A. B.," care of Mr. William Edmonds, Castle-street, Swansea.

MEDLYN TIN AND COPPER MINES COMPANY.
ON THE COST-BOOK SYSTEM.
In 2560 shares, of £10, and in certificates of five shares each.
Deposit £3 per share.
£1 *payable on receipt of certificate, and the remaining* £2 *in instalments of* £1 *per share, when called for.*

These MINES are situate in the parish of WENDRON, and county of CORNWALL, equidistant between the port of Penryn and the town of Helston—thus admitting of the supply of materials to the mines at a very moderate rate of cost.

This sett is held under a new lease of 21 years, from the Duchy of Cornwall, at dues of 1-15th produce, whilst worked by water-power, and 1-18th when worked by a steam-engine; and comprises some eight or nine very rich and promising tin and copper lodes—running east and west through the sett—and from which considerable returns in tin, of the finest quality, have been raised during the present and former workings.

In consequence of the mines cutting rich during the last working by private individuals, an influx of bottom water was cut, which overpowered the water machinery, and renders the erection of an efficient steam-engine now necessary.

To accomplish this object, and for the purpose of raising sufficient capital to meet the required expenditure, as well as to prosecute the working of the mines with effect, the proprietors have consented to dispose of one-half share in the said mines, and to place the whole under the management of a highly respectable company, now under formation.

Applications for prospectuses, and a limited number of shares, may be made to the committee of directors, at the offices of the company, 35, Moorgate-street, where specimens of the produce, in tin ore and black tin, may be seen, and every other information obtained.

Medlyn Tin and Copper Mines Company, Offices, 35, Moorgate-street.

CHATHAM NICKEL AND COBALT MINING COMPANY.
SITUATE AT CHATHAM, STATE OF CONNECTICUT, UNITED STATES.
Capital £20,000, in 4000 shares, of £5 each.—Deposit £1 per share.

This company is incorporated pursuant to the law of the State of Connecticut, which limits the liability of the shareholders to the amount paid upon their shares.

"The ores have been analysed by eminent practical chemists of both England and America, and have been found to average 18 per cent. cobalt and nickel—about 4 per cent. cobalt, and 12 to 18 per cent. nickel."

Application for shares, and full particulars, to be obtained to the solicitors of the company, Hull Terrell, Esq., 30, Basinghall-street; and of Mr. R. E. Little, stockbroker, 11, Warnford-court, Throgmorton-street, London.

STEAM COAL—WITHOUT SMOKE, as per experiments made at her Majesty's Dockyard, Woolwich.

CAMERON'S COALBROOK STEAM COAL, AND SWANSEA AND LOUGHOR RAILWAY COMPANY.—(Completely Registered and Incorporated.)

OFFICES—2, *MOORGATE-STREET, LONDON.*

The directors are now prepared to supply steam ship companies, manufacturers, shippers, and others, with the company's steam coal, either at the company's wharf at Swansea, or in London. A statement, showing by comparative trial the superiority of this coal for steam purposes over every other, and a scale of prices, may be had on application at the company's offices here, or at their wharf at Swansea.—March 18, 1846.

STEAM-ENGINES.—From 8 to 20-horse power ENGINES ALWAYS IN STOCK.

Apply to Mr. CAPPER, ENGINE-MAKER and FOUNDER, BIRMINGHAM.

Price.....£14 *per horse-power.*

LONDON AND COUNTY JOINT-STOCK BANKING COMPANY.
PARENT ESTABLISHMENT, 21, LOMBARD-STREET.

DIRECTORS.

WILLIAM HAWES, Esq., Chairman.
EMANUEL COOPER, Esq., Deputy-Chairman.

William Cory, Esq.	John Cuthbert Joyner, Esq.
James William Deacon, Esq.	Alexander Rogers, Esq.
William Evans, Esq.	Richard Springett, Esq.
John Griffith Frith, Esq.	Clement Tabor, Esq.
Swynfen Jervis, Esq.	John Wheelton, Esq.

General Manager—HENRY LUARD, Esq.

At the SEVENTH HALF-YEARLY MEETING of proprietors, held on Thursday, the 6th of August, 1846, at the London Tavern, Bishopsgate-street, the following report of the half-year, ending the 30th of June, 1846, was read by the secretary.

W. HAWES, Esq., in the chair.

REPORT.

Your directors have much pleasure in laying before the meeting the statement of the progress of the company during the past half-year.

Your directors have declared a dividend at the rate of 6 per cent. per annum, free from income-tax, on the capital stock of the company; and recommend that the surplus of net profit on the half-year, amounting to £1498 4*s.* 11*d.*, be carried, as usual, to the reserved fund, which will then amount to £20,056 7*s.* 5*d.*

The dividend will be payable at the head-office and the branches, on and after Monday the 17th instant.

The foregoing report having been read by the secretary, the following resolutions were severally proposed and adopted:—

1. That the report be received and adopted, and printed for the use of the shareholders.
2. That the balance of £1498 4*s.* 11*d.* remaining to the credit of the profit and loss account be carried to the guarantee fund.
3. That the thanks of this meeting be given to the directors, for the able manner in which they have conducted the affairs of the company.

(Signed) W. HAWES, Chairman.

The chairman having left the chair, it was unanimously resolved:—
That the best thanks of the meeting be given to Wm. Hawes, Esq., for his able and courteous conduct in the chair. (Signed) EMANUEL COOPER.
Extracted from the minutes. (Signed) R. P. NICHOLS, Secretary.

LONDON AND COUNTY JOINT-STOCK BANKING COMPANY.—Notice is hereby given, that a DIVIDEND, at the rate of 6 per cent. per annum on the capital stock of the company, for the half-year ending the 30th June, 1846, will be PAID to the proprietors, either at the Parent Establishment, 21, Lombard-street, or at any of the company's branch banks, on and after Monday, the 17th August inst. By order of the board,

21, Lombard-street, August 5, 1846. HENRY LUARD, General Manager.

OFFICE FOR PATENTS, 7, STAPLE INN, HOLBORN.
J. MURDOCH (successor and late assistant to Mr. Hebert)
Informs INVENTORS and PATENTEES, that, at his OFFICE, they can obtain

REFERENCE TO A CLASSIFIED LIST OF PATENTS,

(THE ONLY ONE EXTANT), which shows at one view all the Patents ever granted for any particular object, whereby they may save much trouble and expense, and procure information not otherwise obtainable. BRITISH and FOREIGN PATENTS OBTAINED, and USEFUL and ORNAMENTAL DESIGNS REGISTERED.

SPECIFICATIONS carefully prepared, and REPORTS of ENROLLED SPECIFICATIONS furnished on moderate terms.

FINISHED and WORKING DRAWINGS executed with accuracy and dispatch.

WILLIAM JOYCE, DESIGNER AND ENGRAVER ON WOOD,
11, *BOLT-COURT, FLEET-STREET, LONDON.*

W. J. respectfully informs AUTHORS, BOOKSELLERS, PRINTERS, &c., that, having had long practical experience in DRAWING and ENGRAVING, of every variety—viz.: Inventions of all descriptions, for Engineers, Machinery, Figures, Landscapes, Architectural and Perspective, Agricultural and Anatomical subjects; Specimen Books for Civil Engineers, Ironfounders, Lamp Manufacturers, Silversmiths, and every other Branch requiring Illustrations, he is enabled to speak with confidence, as to the satisfaction he could give with regard to promptness, accuracy, and economy.

Weekly and Monthly Publications Contracted for.

JAMES LANE, MINING SHAREBROKER,
75, *OLD BROAD-STREET, LONDON.*

JOHN HARVEY, SHAREBROKER AND ASSAYER,
LISKEARD, CORNWALL.

WILLIAM TRENERY, DEALER IN RAILWAY AND MINING SHARES.—ESTABLISHED TEN YEARS.
OFFICES, No. 50, *THREADNEEDLE-STREET, LONDON.*

PAUL RABEY, Jun., and CO., MINE AND RAILWAY SHARE AGENTS.
OFFICE—No. 12, *COPTHALL-COURT, LONDON.*

MESSRS. LINTHORNE, JONES, and CO., STOCK, MINING, AND SHARE AGENTS.

*** Every information will be afforded as to the markets and prices of the above, by application (post-paid) at their offices,
48, *THREADNEEDLE-STREET, LONDON.*

WILLIAM H. SMITH, MINING SHARE AGENT,
10, *WARNFORD-COURT, THROGMORTON-STREET.*

*** SHARES in many valuable MINES FOR SALE, and every information will be afforded, on application.

WILLIAM FOX and SON, No. 53, CASTLE-STREET, LIVERPOOL, have always on SALE PIG-IRON, RAILWAY BARS, CHAIRS, and IRON of every description.—TIN PLATES, WIRE, &c.

THOMAS P. THOMAS, MINE AGENT AND DEALER IN RAILWAY AND OTHER SHARES,
No. 80, *OLD BROAD-STREET, LONDON.*

T. P. THOMAS, in returning his most grateful thanks to his friends for the support they have given him, begs to assure them, that, from his personal knowledge of the leading mining captains and adventurers in Cornwall and Devon, as well as the principal adventurers in London and in the country, he is enabled at all times to procure the earliest information as to the alterations in the different MINES, and has every facility for the PURCHASE and SALE of SHARES at fair market prices, without advertising what particular shares he is a buyer or seller of.

T. P. T. having lately returned from the county of Cornwall, and having personally inspected the underground workings of many of the mines, will be happy to give any information respecting them.

MINING OFFICES, No. 80, OLD-BROAD-STREET,
LONDON.—Mr. RYE has BUSINESS to TRANSACT in the following MINES—viz.: Trelawney, Mary Ann, South Trelawney, Condurrow, East Pool, North Pool, South Roskear, South Basset, Wheal Concord, Devon and Courtney, Stray Park, West Caradon.

MINING OFFICES, REMOVED FROM 16, CORNHILL, to 1, THREE KING COURT, LOMBARD-STREET.—Mr. R. TREDINNICK (of Cornwall), having established PRACTICAL AGENTS and CORRESPONDENTS in every MINING DISTRICT, whereby he obtains early and accurate information respecting MINES, proffers his services to capitalists and adventurers in the PURCHASE and DISPOSAL of SHARES.

MINING PROPERTY.—CAPITALISTS who are disposed to INVEST in CORNISH and FOREIGN MINES, will find the present opportunity very favourable for so doing. From large sums having been lately diverted from such investments for railway speculations, standard mines are now selling at prices that will pay the purchaser 20 per cent. per annum for his outlay. There are also other mines that are on the eve of paying dividends, which can be recommended with confidence.

Applications to be made to Mr. JAMES HERRON, mining agent, No. 3, Adam's-court, Broad-street, London.

MINING OFFICES, No. 1, ST. MICHAEL'S-ALLEY,
CORNHILL, LONDON.

Messrs. WATSON & CUELL have received instructions to PURCHASE SHARES in West Caradon, West Maria, Wheal Mary Ann, Trewallack, Stray Park, Condurrow, and Wheal Gill Mines; and have FOR SALE, SHARES in East Pool, Wheal Bucketts, Trelawney, Marke Valley, South Caradon, Holmbush, &c.

Mr. WATSON, F.G.S., having RETURNED from a MINING TOUR through the counties of CORNWALL and DEVON, will be happy to give any INFORMATION with regard to the MINES—some of which, at this moment, are paying 18 and 20 per cent. upon market prices.

TO MINING SPECULATORS.—THOMAS LITTLE, MINE AND SHARE BROKER,

Begs to inform his friends, and speculators generally, that he has BUSINESS to transact in the following SHARES:—Wheal Concord, Devon and Courtney, Condurrow, South Basset, West Basset, Wheal Cleveland, Ting-Tang, Dolcoath, Hawkmoor, &c.—Address, *MR. LITTLE, HALL OF COMMERCE, LONDON.*

FRANCIS PRYOR, MINE AND SHARE BROKER,
COMFORD, GWENNAP, CORNWALL.

F. P. returns his grateful acknowledgments for the kind and liberal support he has received from gentlemen connected with the mining interest of Cornwall, &c., and begs to announce, that he has now added to the above business, that of AUCTIONEER and APPRAISER, and hopes, by punctuality and strict attention to the interest of those who may entrust him with their favours, to merit support.

N.B.—Mines inspected, and every information given.

One-half the amount advanced on any goods consigned to him for sale, by auction.

Dated Comford, July 22, 1846.

ALTEN MINING ASSOCIATION.—The directors of this association hereby give Notice, that a GENERAL MEETING of the shareholders will be HELD at the offices, Winchester-house, 52, Old Broad-street, on Friday, the 21st day of August inst., at One for Two o'clock precisely, for the purpose of receiving the report of the directors, and also a statement of the financial accounts, to the 31st March last. The accounts will be at the office, for the inspection of the shareholders, three days previous to the meeting. By order of the board,

Dated this 4th day of August, 1846. EDWARD J. COLE, Secretary.

COMBMARTIN AND NORTH DEVON LEAD AND SILVER MINES.—Notice is hereby given, that the GENERAL ANNUAL MEETING of the shareholders in the above concern will be HELD at the counting-house, on the mine, on Wednesday, the 19th day of August next, at Twelve o'clock at noon.

Combmartin Mine, July 21, 1846. C. R. WEBB, Secretary.

NOTICE TO THE MANAGERS OF MINING COMPANIES,
SMELTING WORKS, &c.

Mr. MITCHELL (late Mitchell and Field) begs to announce, that ASSAYS and ANALYSES of all descriptions of ORES, MINERALS, and FURNACE PRODUCTS, are conducted at his LABORATORY, 23, HAWLEY-ROAD, KENTISH TOWN, to which direction all communications are to be addressed.

N.B.—Instruction in all branches of assaying and mineral analysis as usual.

THE PATENT SAFETY FUSE,
FOR BLASTING ROCKS IN MINES, QUARRIES, AND FOR SUBMARINE OPERATIONS.—This article affords the SAFEST, CHEAPEST, and most EXPEDITIOUS MODE of effecting this very hazardous operation. From many testimonies to its usefulness with which the manufacturers have been favoured from every part of the kingdom, they select the following letter, recently received from John Taylor, Esq., F.R.S., &c.:—"I am very glad to hear that my recommendations have been of any service to you; they have been given from a thorough conviction of the great usefulness of the Safety Fuse; and I am quite willing that you should employ my name as evidence of this."

Manufactured and sold by the Patentees, BICKFORD, SMITH, and DAVEY, Camborne, Cornwall.

IMPORTANT TO ENGINEERS, MANUFACTURERS, RAILWAY AND STEAM-BOAT COMPANIES.

Messrs. W. & C. MATHER beg to call the attention of the ABOVE PARTIES to their

IMPROVED ELASTIC METALLIC PISTONS.

The PRINCIPAL FEATURE and ADVANTAGE of THIS IMPROVEMENT is—

1. Its great ELASTICITY and SELF-ADJUSTING PROPERTIES, which enable it to yield to any inaccuracy of the cylinder, whether oval or taper, and to move with the least possible friction.
2. Its extreme SIMPLICITY and LIGHTNESS, consisting of only two pieces of metal, having the vertical and lateral pressure in due and proper proportion, independent of each other.
3. It takes the LEAST possible SPACE, and is well adapted for air and water-pumps, as it allows of a larger water way.

Messrs. W. & C. MATHER feel confident that it is the BEST ELASTIC METALLIC PACKING yet known, for the above reasons.

Models may be seen at the Salford Iron-Works, Manchester; at W. Barker's, engineer, Newton-Moor; and also at J. Mather's, engineer, Beaufort-street, Chelsea, London.

Just published.

AN EXPOSITION OF THE DANGERS AND DEFICIENCIES OF THE PRESENT SYSTEM OF RAILWAY CONSTRUCTION, with SUGGESTIONS FOR ITS IMPROVEMENT. By C. H. GREENHOW.
John Weale, 59, High Holborn.
Models, illustrating the principle, may be seen at No. 3, Lothbury.

MINING IN CORNWALL AND DEVON.—No. V.

CALLINGTON DISTRICT.—This district, which, until the past 10 or 12 years, was comparatively unknown, or at least unnoticed, has, since that period, not only attracted the attention of the capitalist, but has been considered not undeserving that of the mining community of the west—despite the old saying, that there was not a mine in Cornwall worth working east of Truro-bridge. The splendid exception of Wheal Maria, the produce of Holmbush, and the Callington Mines in this vicinity—not to observe upon Fowey Consols, Par Consols, and other mines more distant—at once, however, determines that, whatever value may have been in earlier days, attached to the assertion, but little can be said in its favour at the present day. The mines in the immediate locality of Callington, and passing away towards Gunnis Lake, on the Cornwall side of the Tamar, it will be in their turn now our province to note, ere we proceed to the Tavistock district, embracing the latter, the Wheal Maria sett, which requires a more than ordinarily lengthened notice, while those in the locality require but a passing notice; the want of energy, too generally manifest, convincing us that, although there may be a something in a name, there is no rule which has yet been discovered to apply to the consequent results of mining operations, being in any way influenced by the title or designation applied to the mines. Thus, North Maria, South Maria, East Maria, or West Maria, might, with equal propriety, and with as much, or little, prospect of success, been christened Mary, Jane, Sally, and Eliza; but we suppose the shares went better off, and hence the quotation from the poet, that "a rose, by any other name, would smell as sweet," has been lost sight of by the adventurers in these promising mines. The line we have marked out for our primary notice, includes the Callington Mines, Holmbush, Silver Valley, Wheal Mexico, Harrowbarrow Consols, Harrowbarrow Old Mine, Wheal Martha, Wheal Benny, West Wheal Williams, Wheal Williams, South Wheal Maria, Hawkmoor, Gunnis Lake, Heigneston Down, Drake Walls, Wheal Mary (in Calstock), Trelawney Consols; and shall next week cross the Tamar, and devote a few days to Wheal Friendship, West Wheal Friendship, East Crowndale, Wheal Anderton, Wheal Franco, Devon and Courtney, Wheal Robert, the Virtuous Lady, Crebor, George and Charlotte, and other mines in the Tavistock district—finishing our route with Lamherooe, Wheal Maria, West Wheal Maria, Wheal Fortescue, Great Wheal Williams, Wheal Grace, Wheal Concord, Wheal Walter, Wheal Carpenter, Combe Vale, the Bedford Mines, and the Great Devon Consols—accompanying the report with an outline of the Maria district, taken from an authentic survey. In making such a tour, we shall have embraced the principal mines requiring notice, and in which we may consider our readers will feel an interest; while we shall not allow to pass unobserved those of less notoriety, but, perchance, equally important and deserving of attention.

HOLMBUSH.—This mine is situate in the parish of Stoke Climsland, north of the Callington Mines, and held under the Duchy of Cornwall for a term of 21 years, of which about 11 are unexpired, at $\frac{1}{20}$th dues. The mine is conducted under a London management—G. W. Harrison, Esq., acting as secretary.—The resident agents are, Capt. W. Lean, and Capts. Mayne and Chegwin. Three lodes have been discovered, taking a direction east and west—viz.: the Holmbush lode, the Flap-jack, and a lode lately taken at the 100 fm. level, in the north part of the sett, called the North lode; the several lodes underlaying north 2 ft. 9 in. to 3 ft. in a fm., in addition to which, there is a north and south lode, composed of spar, lead, &c., and which is considered to be the same as that worked on in the adjoining mines, and which has yielded large returns. The mine is situated about 5 miles from Calstock; the cost of carriage being 5s. per ton. The mine is divided into 1000 shares, on which 18*l.* per share has been paid. It has been found necessary, however, within the past six months, to make a call to meet the cost of additional machinery; and the returns of the mine having fallen off, the present monthly cost may be taken at about 650*l.*, and the returns of ore 105 to 110 tons; the last parcel sold on 23d inst., producing 572*l.* 5s.; the average produce of the ore, being about 9 per cent.—There are two engines erected, one of 50-inch cylinder, which, however, is now idle—it being found that the upper engine, 80-inch cylinder, could keep the water: this engine has a 10 ft. stroke in the cylinder, and 9 ft. in the shaft, and is working at the rate of about 6 strokes per minute; the quantity of coals said to be consumed appears to be considerable—the quantity consumed in the past month being 126 tons, including, however, therein the second engine, which worked during 3 weeks of the time. The lower engine-shaft is 100 fms. below adit, and the upper, or Hitchins's shaft, 120 fms., with a sump down about 5 ft. The deepest level driven on the copper lodes is the 120, but the principal workings at the present moment are at the 100; while ends are driving at the 100 and 110 on the caunter, or lead lode. The ground is hard for sinking, as much as 36*l.* per fm. having been paid; but in driving the ground is favourable, and sett at about 2*l.* 10s. to 4*l.* per fm.; in driving through the cross-course, however, 12*l.* to 15*l.* per fm. has been paid. By the suspension of the lower engine, it is estimated that a saving of 40*l.* per month will be effected, as at present the upper engine is equal to her work, although some doubt may exist as to whether she may be able to accomplish it in the wet season. The number of men employed underground is from 115 to 120—the average wages of whom, may be taken at 55s. to 60s. a month; and 50 persons including "maidens," at surface. The country at that part of the mine in course of working is killas; but it forms a junction with the granite as it approaches Kit-hill. We may remark, that the old engine-shaft has not been sunk a fm. during the past six or seven years; this does not say much for perseverance or judicious management, although many thousands have been expended in other workings. We may also observe, *en passant*, that some two or three years since, an engine of (we believe) 40-inch cylinder, was erected at the point now occupied by the 80, and which has since been removed and sold. This seems somewhat strange calculation on the part of the practical agents: it is, however, only due to Capt. W. Lean, and the other agents named, to say, they were not then connected with the mine. We hope, under the new *local* management, there will be a change for the better: it is, at least, time. At the present moment, it would appear, that much expectation is entertained of the results which may attend the exploring of the lead lode.

SILVER VALLEY.—This sett, or consolidation of setts, was formerly known under the respective titles of Wheal Brothers, Wheal Sisters, and Wheal Prosper, or West Wheal Brothers; and at one time attracted much attention from the returns of silver made from the two former, and the high expectations entertained of the latter for tin. The sett is situate in the parish of Calstock, about one mile and a half east of Callington, and is held under lease of 21 years, of which 19½ are unexpired, from W. Worth, Esq., and the Duchy of Cornwall. The mine is divided into 2560 shares, on which 3*l.* per share has been called; the amount of expenditure, up to the present period, being about 8000*l.*, and the current monthly cost, 500*l.* The sett is about 700 fms. in length east and west on the run of the lodes, and 400 fms. north and south. The management of the mine is confided to Capt. Prince, who has as a coadjutor Capt. Richards; Capt. Tonkin having the control of the dressing floors, and Mr. Peter the purser. About 80 fms. of flat-rods are connected with the engine from the lower shaft, from which, as well as the engine-shaft, the ores are drawn to surface; the engine is on the combined principle, with cylinders of 52 and 28 in., with 7-ft. stroke in shaft, and 8 ft. in cylinder. There are also two water-wheels—one of 18 ft., and another of 21 ft., with 1½ ft. breast, carrying 12 stamp heads. A deep adit comes in which takes the lode at 38 fms.—while the shallow adit is only 8 fms. The produce of the mine may be considered as mainly tin, of which about 5 tons is now at surface; in addition to which is 1½ tons of silver ores, estimated to produce about 148 ozs. of silver to the ton, which, after deducting charges, may be estimated at about 28*l.* to 30*l.* per ton, and also a small quantity of lead ore. The mine is carried on under the cost-book system, with a London management, or direction, composed of Messrs. Hodson, Lewis, and Stainsby, aided by Mr. P. N. Johnson, who acts as local manager. The principal workings at the present moment are on the tin lode—the silver lode being poor. Fifty men are employed underground, and 22 at surface. Some little is doing at Wheal Sisters, where a shaft has been sunk 8 fms. to the shallow adit. Meetings are held annually, in the month of June, at the offices of the company, 44, Finsbury-square. About 40 fms. have been driven on the tin lode, and 37 ms. on the silver lode; the former being taken in the engine-shaft at 35 fms. below adit, which is at this point 8 fms. in depth. The direction of the tin lode is 25° south of east, and the silver or south lode 22°. There is also another lode 280 fms. south of the tin lode. The general underlay is north, except the silver lode, which takes a south underlay.

HARROWBARROW CONSOLS.—This sett is situate east of Harrowbarrow Old Mine, and west of Drake Walls, and is in extent 1000 fms. east and west, and 400 fms. north and south, being held under lease from the Duchy of Cornwall, and Mr. B. Cooke, for a term of 21 years, of which 19 are unexpired, at $\frac{1}{16}$th dues—Mr. S. B. Sergeant executes the office of purser, and Capt. B. Cooke that of agent; the meetings are held two-monthly, alternately at Plymouth and the mine, and the accounts carried out on the cost-book system. The mine is divided into 1000 shares, on which 2*l.* per share has been paid; the expenditure up to the present time, may be set down at about 1500*l.*; the average monthly expenditure, at the time of the mine being suspended, was 60*l.* The distance from Calstock is about 2½ miles, and the cost of carriage 3s. per ton. There are 3 lodes in the sett, ranging east and west, with an underlay south of 2½ ft. in a fm. Two drawing shafts have been sunk—the one 45 fms., and the other 35 fms. from surface; the adit being 20 fms. to 25 fms. deep, and which has been driven 300 fms. Two cross-courses have been discovered running north and south, with an underlay west, but do not heave the lodes—the one is a small flookan, and the other spar. The operations at the mine have been suspended for three months.

WHEAL BENNY.—This mine which is situate on the Cornwall side of the banks of the Tamar, is immediately south of Lamherooe Wheal Maria, and west of West Wheal Williams. The extent of the sett is about 800 fms. north and south, and 480 fms. east and west, on the run of the lodes, it is held under the Duchy of Cornwall, under a lease for 21 years, lately granted at $\frac{1}{16}$th dues: there is also a portion of the sett, which (we are given to understand) has been promised by Mr. Oliver, it being freehold land, at the same dues. The mine is worked on the cost-book system, and is divided into 256 shares, on each of which 3*l.* has been paid; the cost of working up to the present time being from 750*l.* to 800*l.*—Mr. S. Sergeant of Callington, acts as purser, and Capt. T. Penaluna as the agent. The monthly cost may be taken at, from 55*l.* to 60*l.*; but such must depend in this, as in all other cases, upon the nature of the workings, and whether the adventurers should determine on extending their operations, and increasing their cost by the erection of machinery, which appears to be indispensible 13 lodes are said to have been discovered, ranging east and west, or nearly so—the variation south of east, being from 6° to 12°; they have generally a north underlay—two however being south. The nature of the ore is similar to that observed in the mines in the immediate district, being principally composed of copper, spar, peach, and gossan. The present workings are confined to clearing up the old engine-shaft, said to be 13 fms. deep, which is now down 6 fms., but has this day (11th) been temporarily suspended; the other operations are in driving at the adit level, on the Benny lode, and driving a cross-cut south to intersect other lodes on a cross-course, which will take the lode at an extreme depth of 45 fms. An adit has been driven on this lode 43 fms., where the cross-course was intersected from this point; 16 fms. further have been driven on the lode, and a cross-cut 48 fms. on the cross-course; the lode was found to be heaved 4½ fms. north. There is also another cross-course in the sett, which has been proved to be 4 fms. wide; the depth of adit on the lode is 20 fms., the ground rising at an angle of 36°, going south. The strata is killas, forming a junction with the granite in a south direction. The lodes at present discovered are immediately south of Lamherooe sett, where (it is presumed) they come in at a shallow depth, in taking their head west with a north underlay. It is, however, somewhat questionable whether one or other of the lodes may not underlay south.

PRINCE EDWARD MINE.—This mine is situated on Tremollet Downs, in the parish of Stoke Climsland, about three miles west of Wheal Maria, or Great Devon Consols. The sett is held under the Duchy, at $\frac{1}{16}$th dues, and extends upwards of 1000 fms. north and south, and about 670 fms. east and west. Several lodes run through the sett, which are, however, not parallel; but appearing in some instances to be branches, either springing from, or feeders leading into, the lode, with which they form a junction; there is a large lode taking a north and south direction, which has been sunk on to the depth of 7 fms., where it is found composed chiefly of gossan, quartz, and mundic. It is proposed to drive on this lode, to intersect the east and west lodes; but the sett having only lately changed hands, no determined line of operations has (so far as we can understand) been laid down. One of the east and west lodes, which has been opened upon near the surface, is found to carry gossan with it at the backs; but it is impossible to offer an opinion, as to the value or productiveness of the lodes, until they are seen at a greater depth—to effect which, it will be necessary that machinery should be erected, which, to prove the mine in depth, will require steam-power—although, in the early stages, a stream of water which passes through the sett may be rendered available, by erecting a wheel partially to try the mine at a shallow depth, and, on the subsequent erection of steam-power, may be rendered available for crushing and dressing the ores. It is proposed to work the mine on the cost-book principle—a finance committee being appointed from among the shareholders in London, who will meet monthly or oftener; meetings of the adventurers, we presume, being held at the offices of the company, once in every two months, or at such stated periods as may be determined upon, for auditing the accounts, and making the necessary calls, or determining on the division of any surplus. The mine is divided into 2048 shares, and an immediate call of 1*l.* 10s. per share has been made—making 3072*l.*; and it is the intention of the parties, immediately on the appointment of a committee, to prosecute the mine vigorously. The present local agent is Capt. Carpenter; and the London business of the company, is under the immediate inspection of James Crofts, Esq., of 4, King-street, Cheapside, who has been appointed secretary.

LAMHERooe WHEAL MARIA.—This mine is situate in the parish of Lamerton, in the county of Devon, immediately west of Wheal Fortescue, West Wheal Maria, and Great Wheal Maria, and bounded on the west and south by Wheal Martha and Wheal Benny; and on the south-east by Wheal Williams and South Wheal Maria. The sett extends 430 fms. on the run of the lodes, and about the same distance in a north and south direction; it is held under lease for 21 years, of which nearly 20 are unexpired, at $\frac{1}{16}$th dues—Mr. James Lethbridge being the lord. The management of the mine is vested in Capt. John Tabb—G. W. Snell, of Callington, acts as purser The mine is divided into 2048 shares, on which 2*l.* per share has been paid, exclusive of the purchase-money; the average monthly cost for labour may be estimated at 800*l.* per month. Eleven lodes have been discovered, nine of which have a north underlay, of about 3 ft. in a fathom; and two with a south underlay, of the same angle or declination. Two shafts have been sunk—the north, or engine-shaft, being about 15 fms. deep, and the whim, or south shaft, 7 fms.; the strata is killas, or clay slate. An engine, of 60-inch cylinder, has been erected, on a new construction, by Messrs. Hocking and Loam, which has just been put to work; she has a 10-feet stroke in cylinder and shaft, and is working at about two strokes per minute. A communication with the lower shaft is completed with flat-rods, attached to the engine; the distance between the two shafts is about 125 fms.; the distance of the engine shaft from the river being about 180 fms. north; these two shafts may be said to command the six most southern lodes—the three first underlaying north, the next two with a south underlay, which will form a junction at about 25 to 30 fms.—the remaining lode underlaying north. It will thus be seen, that the north lodes, which extend 250 fms. north of the engine-shaft, cannot be worked by the present machinery, which must be necessarily confined to the south part of the sett; where the whole power of the engine is required—the adventurers have determined upon leaving the north lodes for the present. The number of men employed is about 45—the wages of the underground men varying from 60s. to 65s. per month, and surface labourers 48s. per month. Materials are delivered at Cotehele and Calstock—the rate of carriage from which may be taken at 6s. 6d. per ton. The management is confided to a finance committee, who meet in London, and whose services are tendered gratuitously. The committee is composed of Messrs. J. Edwards, P. Davey, jun., W. Morrison, D. Nutt, J. J. Hays, G. W. Price, H. Smith, W. Pegg, T. Ruston; and held monthly or oftener if required. The mine is held on the cost-book system, inasmuch that the names of the adventurers are inserted in the cost-book. General meetings are held at the offices of the secretary, James Crofts, Esq., No. 4, King-street, Cheapside.

WHEAL HOLWELL.—This sett is situate in the parish of Stoke Climsland, about a mile north-west of Lamherooe Wheal Maria, and is held under lease from the Duchy, for 21 years, at $\frac{1}{20}$th dues. Five lodes have been discovered, but the infancy of the present workings preclude any definite report as to the nature of the lodes, except such as they present near to surface. The mine is divided into 2048 shares, at the rate of 1*l.* 10s. per share. The general run of the lodes is from 10 to 12° south of east, and

north of west, and vary in size from 3 to 12 ft. big; the lodes are accompanied by a pretty gossan, with occasional spots of ore; but it is impossible to form any judgment at surface, although the indications are such as, in the opinion of practical men, will warrant a considerable outlay to prove the lodes in depth. The management of this mine is to be on the cost-book system, and a finance committee appointed in London, while the accounts will be audited and discharged monthly, so that no liability shall be incurred. The agent on the mine is Capt. Samuel Floyd; and the London management, is under the superintendence of Mr. James Crofts, who acts as secretary. We take this mine, *en passant*—wishing to note the several adventures which present themselves in course of our travels; although, as will be seen, the operations of the company are of too limited a nature—or rather, we might say, have hardly commenced—which will enable us to present a report upon the operations of the mine, or indeed its prospects, beyond the sanguine opinions entertained by those parties interested in the adventure.

[*To be continued in next week's Minin Journal.*]

Mining Correspondence.

ENGLISH MINES.

BARRISTOWN.—The lode in the 24 fm. level end west of engine-shaft, is 2 ft. wide, producing about half a ton per fm. The lode in the 18 fm. level end west of flat-rod shaft, is 3 ft. wide, producing over 2 tons per fm. The lode in the end west of Nangle's shaft, is 3½ ft. wide, producing over 1 ton per fm. The shaft is sunk through the lode, and the above end is driving about 12 fms. from surface. The adit end east is producing rather more ore than usual, lode about 2 ft. wide; we still intersect branches in Clon Mines, but nothing more of any value. The following are our prices for August month:—Flat-rod shaft, 9*l.* per fm. (9 men); 24 fm. level end west, 5*l.* per fm. (6 men); rise in back 24 fm. level, 5*l.* per fm. (4 men); 18 fm. end west, 3*l.* per fm., and 5*l.* per ton for ore (6 men); winze sinking under 12 fm. level west, 4*l.* per fm. (6 men); winze sinking under 18 fm. level, west of flat-rod shaft, 4*l.* 10s. per fm. (6 men); footway shaft, sinking under 18 fm. level, 5*l.* per fm. (6 men); end west of Nangle's shaft, 30s. per fm. (6 men); Nangle's shaft, sinking at 4*l.* per fm. (4 men); adit end east, 25s. per fm. (3 men); Clon Mines end, driving north-east, 2*l.* per fm. (4 men); end driving south-west, 10s. per fm. (4 men). Our tributers number about 40 men, prices averaging 4*l.* 10s. per ton; there is a vessel this day arrived, that will take a cargo of ore, about 40 tons, now ready. We shall lose no time in shipping it.—Thomas Angove: July 31.

BEDFORD UNITED.—At Wheal Marquis, the lode in the 80 fm. level east is 2 ft. wide, composed of spar and mundic, with spots of ore in places. The lode in the 70 fm. level east is 2 ft. wide, saving work; the stopes in the bottom of this level are still worth 16*l.* per fm. The lode in the 58 fm. level east is poor. At Ding Dong, the lode in the 24 fm. level west is 3 ft. wide, altogether more promising than for some time past. At Wheal Tavistock, the lode in the 47 fm. level, east and west, is 2 ft. wide, producing good stones of ore. There is no alteration in the south engine-shaft since last report. The lode in the adit level is 18 in. wide, producing stones of ore in places. We weighed, at Morwelham, on Friday last, May ores, 90 tons 3 cwts., and sampled June parcel, computed 92 tons. We have now cleaned and ready for sale about 10½ tons of tin, samples of which have been taken, and will be sent to the smelters as soon as possible.—J. Phillips: August 4.

CALLINGTON.—I beg to inform you, that we find the water considerably decreased at the north mine, being less than five strokes per minute at this time; in driving towards the lode, at the 100 fm. level, our progress is slow, the ground being hard. In the 90 fm. level, driving south, we find the ground rather more wet and troublesome for driving through, which is a favourable omen; the lode has not been taken down in the north end, the lode is producing silver-lead ores; driving east, at this level, on the Kelly Bray lode, we are not yet through the cross-course; it is more than 3 fms. wide. In the 80 fm. level the lode continues small, producing rich work for silver-lead ores. The copper lode, in the 70 fm. level east, is small, producing copper ores. The counthouse shaft is holed to the 70 fm. level. At the south mine, in the 112 fm. level, driving south, the lode is producing silver-lead ores; in the north end no lode has been taken down. In the 100 fm. level south the lode looks promising; the back will set at a moderate tribute; no lode taken down in the north end. In the 90 fm. level north we have suspended the end, the men being put to rise against a winze, sinking in the bottom of the 80 fm. level; this, when holed, will open some good tribute ground. In the 80 fm. level the lode is producing silver-lead ores. The castings for the crusher are now on the mine, and the carpenters busily engaged putting the same together.—J. T. Phillips.

CARADON UNITED.—Our engine-shaft is now down 29 fms. 3 ft. 11 in.; and as we shall have to sink from 2 to 3 ft. for a fork, and to case down the shaft, &c., it will take us nearly three weeks before we shall commence to cut the plat. We have still good portions of ore in the small veins, dropping towards the lode—and have every reason to believe, at the 30 fm. level, the lode will have a good appearance. We are now giving our shaft men 33*l.* 10s. per fm.—William Penrose: July 31.

CONSOLIDATED TRETOIL.—The lode in Henwood's shaft, sinking under the 70 fm. level, is 18 in. wide—saving work. We have holed the rise in the back of the 70, west of Henwood's shaft, to the winze coming down from the 60, which has opened ground for tribute, and ventilated the 70 west, which we have again commenced driving; the lode in it is 15 in. wide, producing a little ore. We have also holed the rise in the back of the 70, east of Henwood's, to the bottom of the winze coming down from the 60, which has ventilated the 70 and 60 fm. levels—the driving of which we have also resumed; the lode has improved in the rise and winze since their commencement, and, from the appearance of the dip of the ore, it is very likely the 70 east will improve after a few fathoms. The lode in this level, at present, is 1 ft. wide, producing some stones of ore. In the 60 fm. level east the lode is 6 in. wide, producing a small quantity of ore. The lode in the rise, in the back of the 60, west of Williams's, is 9 in. wide—saving work. In the winze coming down on this rise from the bottom of the 50, the lode is 9 in. wide—saving work. In the winze coming down on this rise, from the bottom of the 50, the lode is 9 in. wide—good saving work; improved since last reported. The lode in the 50, east of John's shaft, is 1 ft. wide, composed of spar, black jack, and yellow ore. The lode in the 50 fm. level, east of Henwood's shaft, remains much as reported.—H. W. Williams: August 1.

EAST TAMAR CONSOLS.—At Whitson, in the 46 fm. level, south of Hitchins's shaft, the lode is small, but kindly; in the 46 fm. level, north of ditto, the lode is 18 in. wide, good work. In the 36 fm. level, north of ditto, the lode is 2 ft. wide, producing good stones of silver-lead ore. At Furzehill, Harrison's shaft is sunk 3 fms. 3 ft. below the 30 fm. level, lode 2 ft. wide, good saving work. In the 50 fm. level, south of Harrison's shaft, the lode is 2 ft. wide, a very promising lode. We have sampled for July month, 40 tons of silver-lead ores.—B. Robins: August 3.

GREAT WHEAL MARTHA CONSOLIDATED.—We beg to inform you, that the lode at the 60 fm. level east has considerably improved since our last report. It is at present at least 6 ft. wide, containing mundic and spots of yellow copper ore. A large stream of water issuing from the north wall, induced us to cut into that part, when we discovered a lode approaching that of which we have just spoken, somewhat like the letter ⊱; it is about 2 ft. wide, spotted with yellow copper ore. Should it keep its course, it will be found to have formed a junction with the main part, or lode, in course of 6 ft. driving. The surface water at the new mine has so much decreased during the last fortnight that we have found it impossible to drain the 20 fm. level—consequently, nothing has been done in it since our last report. The stopes in the back of the 10 fm. level are poor; but the ground in the pitch is opening favourably. The new engine-shaft is sunk 14 fms. below the adit level, and the ground continues favourable for sinking. The sumpmen having been engaged this week in dividing the whim from the engine-shaft, fixing pent-house, &c., is the reason of their not having sunk as much as heretofore.—J. Prince; T. Penaluna: August 1.

GUNNIS LAKE.—I beg to inform you, that Bailey's engine-shaft is 10 fms. 4 ft. under the adit level; the lode therein is upwards of 2 ft. wide, composed of gossan, and spar, altogether, a strong kindly lode. The 10 fm. level east of western shaft is suspended.—W. Richards: August 4.

HANSON.—Our sumpmen have again commenced sinking Stainsby's engine-shaft, in which the lode is 3 ft. wide, with some ore. In the 22 fm. level, east on Stainsby's lode, the lode is 2 ft. wide, not quite so good for ore as when I wrote last. The lode has made a small nook, but is again opening; it is a kindly lode, containing a large portion of mundic, peach, and prian, with some good stones of ore. The winze in the bottom of the 12 fm. level, east of engine-shaft, is idle at present; the east pitch, on caunter lode, in consequence of the water not as yet drawn off, is idle.—Z. Williams: August 3.

HAWKMOOR.—The lode in the 15 fm. level, east of Hitchins's shaft, is about 2 ft. wide, producing good stones of ore.—P. Richards: August 4.

HOLMBUSH.—The ground in Hitchins's shaft is hard for sinking, being a mixture of ironstone and killas. The 120 fm. level, west of Hitchins's shaft, is still in the cross-course. In the 110 fm. level north the lead lode is 4 ft. wide, composed of spar, prian, and stones of lead; in the south end, at this level, which we have resumed driving the lead lode, is 5 ft. wide, composed of spar, prian, and spots of lead—the ground is favourable for driving, being set at 2*l.* 15s. per fm.; we have about 15 fms. further to extend this end to intersect the south copper lode, now wrought on in the 100 fm. level, which we shall hasten on as fast as possible. In the 100 fm. level, driving south, from the north part, reported on last week, we have not discovered any other branch as yet; in the winze, sinking below this level, the lode is 20 in. wide, and worth 16*l.* per fm.; in the 100 fm. level south the lead lode is 5 ft. wide, composed of spar and flookan, with stones of lead; in the same level, driving north, the lead lode is 2 ft. wide, composed of spar, prian, and mundic, with spots of lead. In the 90 fm. level, west of Hitchins's shaft, on the north part, the lode is 12 in. wide, producing stones of ore; in the same level, driving south, the lead lode is 2½ ft. wide, composed of flookan and spar, with strings of lead. The ground in Bray's rise is much the same, being set at the same price per fm.—viz.: 10*l.* 10s. We have about 5 fms. further to rise to communicate to the shaft sunk below the 60 fm. level. In the 62 fm. level south the lead lode is 3 ft. wide, composed of spar, flookan, and a great quantity of mundic, with spots of tead. We weighed at Calstock Quay, on Friday last, June ores, 106 tons 12 cwts., and sampled July ores, computed 106 tons.—W. Lean: Aug. 4.

LANIVET CONSOLS MINES.—We have about 3 fms. more to drive north of Elizabeth shaft to intersect the lode at the 80 fm. level, which we hope to do in a fortnight—the ground being more favourable for driving, and much more kindly, and where we shall, no doubt, cut a course of ore. In the 70 fm. level east, on the south part of the lode, the leader is 1½ ft. wide, composed principally of flookan, and occasionally producing some good stones of rich yellow ore. The 70 east, on the north part, is 2 ft. wide, still producing good firm yellow ore in the capel. In the 70 west, on the south part of the lode, the leader is 1 ft. wide—orey; in the 70 west, on the north part, the leader is 2 ft. wide, with a branch of rich grey ore, about 6 in. wide; as this part of the lode is looking promising, we have set an end to drive west, where it is likely we shall cut out some tribute ground. In the 40 fm. level east there is a soft flookan, and sparry lode, about 2 ft. wide, which has a very promising appearance; and as this end is going into maiden ground, we may daily expect an alteration for the better. Since our last report, the men sinking the north shaft have been busily engaged in sinking bob-pit, erecting whim, &c.; the ground still looks kindly, and still very favourable for sinking; and should it continue so, which we have no doubt of, we hope to accomplish our object in cutting the lode 30 fms. from the surface in quick time.—August 3.

TAMAR SILVER-LEAD.—The engine-shaft is sunk 13 fms. 3 ft. below the 145 fm. level, the ground is still favourable for sinking. In the 145 fm. level the lode is 2 ft. wide, composed of capel and ore. In the 135 fm. level the lode is 3 ft. wide, 9 in. of which is very good work. In the 125 fm. level the lode is 2½ ft. wide, work of a good quality. In the 115 fm. level the lode is 1 ft. wide, composed of mundic and ore. In the 105 fm. level the lode is 2 ft. wide, producing good stones of ore. In the winze, sinking in the bottom of the 135 fm. level, north of the shaft, the lode is 2½ ft. wide, 1 ft. of which is rich work. At North Tamar, the engine-shaft is sunk 7 ft. below the 60 fm. level, the price for sinking is 15*l.* per fm. We sampled, on the 31st ult., 101 tons of rich silver-lead ores, 14 tons of which were risen from the north mine. At Wheal Hancock, we commenced cross-cutting east on the 1st instant, with the intention of intersecting Ward lode. Holes Hole shaft is sunk about 13 fms. below the surface; some very promising stones of mineral have been formed in the droppers falling towards the lode. On the whole, I am happy to say our prospects are looking favourable.—J. Sprague: August 3.

TINCROFT.—The ground in the new engine-shaft, below the 90 fm. level continues hard; we hope to get it to the 100 fm. level in five or six weeks. The lode in the 90 east is 2 ft. wide, orey, but not rich; the 90 west is near the cross-course, and producing only occasional stones of ore. The 80 east is at present unproductive; the lode in the 80 west is 3½ ft. wide, worth 20*l.* per fm. A winze sinking from the 70, about 10 fms. beyond this end, is producing good work for ore, worth about 8*l.* per fm.; the 70 east is producing good work for tin, with some copper ore, worth 10*l.* per fm.; the 70 west is producing some ore, and very kindly. The 60 east is producing tinstuff, but not rich; the lode in the 60 west is 2 ft. wide, composed chiefly of mundic, with some good stones of ore—very promising indeed. Some of our pitches have improved very much since my last report. We have holed a winze from the 80 to the 90, to the east of the engine-shaft; the ends of the winze will now be set at 3s. 6d. in the 1*l.* tribute. At Palmer's, we continue to sink the shaft and winze below the 70 fm. level; the shaft is now about 4½ fms. below the level, the winze about 2½ fms. below the level; the main part of the lode has not come into the shaft as yet, but we have a lode in the winze, about 2 ft. wide, worth 15*l.* per fm. The lode in the 70 end west is 2 ft. wide, worth about 10*l.* per fm. Our pitches in this part of the mine continue to produce fair quality ore. Our new shaft is now down about 23 fathoms, ground favourable. In the south mine, the stopes from the engine-shaft east are worth about 20*l.* per fathom; the stopes to the west of the shaft are worth 12*l.* per fathom. The lode in the 152 west is large, and tinny throughout. The lode in the 142 east is also tinny, and promising. The lode in the 120 east is large, producing good work for tin. The 110 is worth 10*l.* per fm. The 100 west, on south part of Highburrow lode, is worth 15*l.* per fm.; the winze, sinking on the same part, is worth 20*l.* per fm. On the whole, our prospects are very cheering.—W. Paul: Aug. 3.

TRELEIGH CONSOLS.—In the 100, east of Christoe, the lode is 3½ ft. wide, with a very fine appearance, just as last week for ore, worth about 10*l.* per fm.; the 100, west of ditto, is driving north-west by the cross-course. The 90, east of ditto, is suspended, poor, about 12 fms. from the boundary; in the 90, west of ditto, the lode is small, very little mineral, but rather more kindly; in the 90, east of Garden's, the lode is 3 ft. wide, not quite so good as last reported, worth about 40*l.* per fm.; in the 90, west of ditto, the lode is 4 ft. wide, rather improved, worth 45*l.* per fm. The 80, north of Good Fortune, is suspended; we have driven 3 fms. 1 ft. north through the lode, and the north part of the lode is the most kindly—capels and spar. In the rise, above the 70 west, the lode is large, and stones of ore.; the 70, west of ditto, is stopped until the rise is holed. In the winze, below the 60, the lode is 3 ft. wide, worth 6*l.* per fm.; this is coming down on the rise in the 70; in the 60, west of Symons's, the lode is 20 in. wide, worth 6*l.* per fm., and kindly; the rise above ditto is holed, the back is set to four men, on tribute at 5s. In the 50 cross-cut north, in the last week, we have cut two other branches since the one mentioned in the former report, but I think the main part of the lode is still before us; the winze below the 50 is holed; in the 50, west of ditto, the lode is about 2 ft. wide, producing a small quantity of ore. In the 34, west of ditto, the lode is about 1 ft. wide, but very little mineral. In the 20, west of ditto, the lode is rather small at present; having holed some winzes, we have resumed these ends. In the adit, west of ditto, the lode is small, without mineral. The west shaft is sunk 4 fms., present price 4*l.* 10s., in the country.—W. Symons: July 31.

UNITED HILLS.—At the 90 fm. level, the lode in the eastern end is 3 ft. wide, 2 ft. ore of fair quality; in the western end the lode is 3½ ft. wide, 2½ ft. ore of good quality. In the 80 fm. level, eastern end, the lode is 4 ft. wide, 2½ ft. ore of low quality. We have commenced driving north of the diagonal shaft, at this level, to cut the north lode. In the 70 fm. level, east of eastern shaft, the lode is 2 ft. wide, 6 in. ore of good quality. West of James's shaft the lode is 2 ft. wide, poor. In the 60 fm. level, eastern end, the lode is 2½ ft. wide, 18 in. ore of average quality. West of Harper's winze the lode is 2 ft. wide, 1 ft. ore of average quality. In the 50 fm. level the ground is still favourable for driving. At Wheal Charles, in the 50 fm. level, the lode is 2 ft. wide, producing but a small quantity of ore. In the 40 fm. level the lode is 15 in. wide, 1 ft. ore of average quality. At Wheal Sparrow, in the 40 fm. level the lode is 2 ft. wide, unproductive. In the stopes, in the 30 fm. level, the lode is 2 ft. wide ore of average quality; the lode in the winze, sinking below this level, is 2½ ft wide, 18 in. ore of fair quality.—T. Trevenen; R. Williams: August 4.

WEST WHEAL JEWEL.—In the 115 fm. level, east of cross-cut, on Wh. Jewel lode, the lode is 15 in. wide—no improvement since our last report—drove 2 fms. 1 ft. 6 in. In the 85, west of ditto, the lode is 1 ft. wide, worth 5*l.* per fm.—drove 3 fm. 3 ft. 3 in.; the 85 east, on the same lode, is unproductive—drove 2 fm. 1 ft.; suspended. In the 100 ditto, west on the same lode, the ground is hard for driving, lode 15 in. wide, producing some stones of ore—drove 2 fm. 1 ft.; in the 100 fm. level, east on ditto, the lode is worth 6*l.* per fm.—drove 4 ft.; these men in the part north have been putting in a tram-road in this level. In the 70, east of ditto, on the same lode, the lode is 2 ft. wide, unproductive—drove 1 fm. 3 ft. The 12, east on ditto, is suspended—drove 2 fms.; in the 12, west on Tolcarne tin lode, the lode is worth 20*l.* per m.—drove 1 fm. 4 ft. 6 in.; in the 12, east on ditto, the lode is 2 ft. wide, worth 6*l.* per fm.—drove 1 fm. 5 ft. 6 in.—R. Johns: August 3.

WHEAL AGNES—I thought, by this time, to have cut the lode in the adit but the ground has proved harder than I expected. The lode in the north part of the mine is just the same as last week's report.—B. Robins: August 3.

WHEAL LOUISA.—The engine-shaft is down 12 fms., the branches in the shaft are still looking well, tending towards the lode, and spotted with ore. The fine copper lode that has been discovered in the adjoining sett is running into Wheal Louisa sett from 300 to 400 fms., through which there is a beautiful strata of ground, congenial for copper ore; it is my opinion that it would be advisable to commence working as early as possible in that part of the mine.—James Chynoweth: August 5.

WHEAL TRELAWNEY.—The engine-shaft is 9 fms. below the 32 fm. level; the lode in the 32 fm. level, south of the shaft, is 3½ ft. wide, and worth 25*l.* per fm.; in the same level north it is 2 ft. wide, and worth 16*l.* per fm. The lode in the 22 fm. level north is 3 ft. wide, and worth 25*l.* per fm.; the lode in the winze, sinking under this level, about 16 fms. north of the shaft, is 4 ft. wide, and worth 28*l.* per fm. The lode in a winze, sinking under the 22 fm. level, about 35 fms. south of the shaft, is 3 ft. wide, and worth 18*l.* per fm. The lode in the 12 fm. level north is 1 ft. wide, and worth 5*l.* per fm. Trelawney's shaft is 10 fms. below the surface. Our 99 tons of lead was sold on Tuesday last to Messrs. Mullins, Brothers, and Co., at 16*l.* 3s. per ton.—Peter Clymo, Jun.: August 4.

WHEAL TREHANE.—The lode here is cut very good at last; it was cut on Tuesday, and found to be about 3 ft. wide, and 1 ft. good work—in fact, nearly solid lead; they are expecting to cut the east and west lode also every day, and, from the appearance of this lode 6 fms. deep, there is no doubt of it being found to contain a bundle of lead; the run on this lode is more than a quarter of a mile; the north and south lode now cut is found in a level driven north-west of the shaft—the east and west lode having hove it several fathoms. We have not a drop of water in the shaft or level, and can break the lead and send it up perfectly dry.—August 6.

FOREIGN MINES.

Mexican and West India Mails.—The Royal Mail Steam-Packet *Clyde* William Symons commander, arrived at Southampton, on Wednesday afternoon, bringing 80 passengers, and mails of the following dates:—From Tampico, June 21 and 29; Vera Cruz, July 2; Havannah, 11; San Juan Nicaragua, June 23; St. Jago de Cuba, July 5; Jamaica, 9; Puerto Rico, 13; Demerara, 5; Barbadoes, 9; Granada, 11. She also brings on freight $349,106 on merchants' account, 3656 ozs. gold dust, 175*l.* British coin, 22 lbs. platina, 11,159 ozs. silver, 2 serons cochineal, 102 bales tobacco, 53 bales sarsaparilla, 51 cases cigars, 76 packages sundries, 2386 plata bruta.

ANGLO-MEXICAN.—*Guanaxuato, June* 26.—I regret that I have to report nothing but loss this month—the fact is, the campos fell off, and the buscones have been hiding in the mountains, out of the way of the press for soldiers, which has been very severe here, in order to supply troops to march against the Americans. To add to these two grave causes of loss, there has been the feast day of Corpus Christi, which always demoralises the workmen for a full week afterwards. We have had to buy very heavily of powder also, as well as other requisites; and I am sorry to say, too, that the competition at the rescates has died away. Notwithstanding all these causes of loss, I look upon the results to be so serious, that I shall shortly proceed to the mine, and investigate more minutely, both aboveground and below, the reasonable causes of such a falling off; and if I find these causes are likely to continue, it will be better to put a stop to them at once, as it is useless to make a profit one month and lose it the next.

	Memoria.			Sale.			Profit.			Loss.		
May 23	$ 736	6	7	$ 1231	4	0	—			$121	0	7
30	500	2	2	997	0	0	—			1	6	2
June 6	344	3	4	1563	6	0	237	3	8	—		
13	800	4	11	1032	3	0	—			283	7	5
20	777	4	6	1036	7	0	—			259	1	0
Sale of hacienda ores, 17th							—			—		
										$665	7	2
Less										254	3	8
Loss in the five weeks										$411	3	8

Total number of cargas, 775; at the average price of $7½ per carga.

Sirena.—The account not being yet sent in, I do not know whether we participate in the profits or not; in all probability we shall, as usual, receive nothing but the rent.

BOLANOS MINES.—*San Clemente, June* 17.—I have to acknowledge your secretary's letter of the 1st April.

Zacatecas District Mine Report.

You will see, by the ore list, to how wretched an amount the produce of the San Clemente setts has been reduced; and even this little is nearly all obtained from the attle which filled the old workings—so complete is the exhaustion of the stopes and pillars of the mine. The threads of ore met with in the roof at the west end of La Luz has continued to employ a pare of handa, but it has led to nothing of any consequence. The lode in the west end of La Luz itself—if it exists at all—has diminished down to a thread of quartz, one-quarter of an inch wide, there being no other appearance of vein there.

San Francisco de Paula Mine.—There has been a falling off also in this mine, in the raising of ores and the ley in the last fortnight, having given less than 50 cargas, worth $4; it seems, however, to be gradually increasing again. We are now continuing the east level, No. 2, in whole ground. The south cross-cut from level No. 2, through San Miguel branch, is now driven about 11 varas; it has gone through a vein of poor azogues, and is now in colorados, with all the appearance of their belonging to Rayas lode. The west end of San Miguel continues in azogues; two pare of buscones are working in the winze of this name on good ore; next week we shall resume the sinking of this winze as a tutwork. The sinking of the shaft has been very unsatisfactory, owing to the excessive hardness of the rock; the price is $115 per vara, and the sinking only about 1 vara per week. In order to avoid this hard level of country, I thought it advisable to commence the cross-cut, No. 3, a little above it, which was done at the depth of 138 varas from the mouth of the shaft; the rock is still very hard, so that in four weeks we have advanced only 6½ varas.

Veta Bella Mine.—The water is kept at 150 varas by working the malacate at Bolodos three days in the week.

Celestina Mine.—The following bargains have been driving with the object of breaking ore—say, rise No. 2 of Mayorazgo, and winze No. 3 of same name; and, although there have been some fluctuations in the quantity and quality of the ore produced, the expenses of the bargains have been abundantly covered. occasionally a narrow thread of ore, of very high ley, is met with, but the average of the grueso is about 15 mcs., the granza and tierras from 3 to 5 mcs. The following works have been carried on for discovery, or for opening the mine:—*Winze, No. 1, Mayorazgo,* as footway to 64 vara level, after going through little bunches of immensely rich ore, its pintas suddenly ceased to give silver; this week, however, they again assay 6 mcs. per monton. *North end, Mayorazgo.*—This bargain has been advancing rapidly, and sometimes meets with very rich, but very narrow, bunches of ore. *Winze of Celestina,* on the main lode, has been sunk during the month always in ore of from a few inches to a quarter vara width, and of from 5 to 20 mcs. per monton; the sinking has been rapid, say about 3 varas per week. *Sixty-four vara cross-cut south.*—This work has been continued, with the view to look for the Mayorazgo lode in the south wall of Celestina. *The rise from this cross-cut* meets winze No. 1 of Mayorazgo—this has now risen about 9 varas on the incline of the Celestina lode, and not yet cut the Mayorazgo lode; the underlie of which, in the winze above, is 45°. We may, however, expect to reach the j unction now at every shot. No silver has been found in the Celestina lode in this rise. *East end of 64 vara level.*—A bargain has been set this week to communicate with the winze of Celestina, which will enable us to attack the ores in that winze with convenience and economy, and open other exploring works. *North cross-cut 64 varas.*—This bargain has been driven fairly, and, in four or five weeks, we may expect to meet with the Principe lode, unless its underlie at this depth should be much greater than at the surface.

From a letter dated 14th June.—Cerro del Bote Mine.—The ore raised from this mine has continued at about 600 cargas weekly; the ley, as before, averages 6 mcs. The communication for ventilation has not yet been made, but as the smoke from the shots goes from one side to the other, it is confidently expected in another week.

P.S.—*June* 19.—The communication has been made, and 1000 cargas have been raised this week; the leyes also seem to rise.

Statement showing the General Results of the Mines and Haciendas for May:—

Mines.	Profit.			Loss.		
San Clemente Mine	$ 864	3	7	—		
San Nicolas	2849	7	3	—		
Malanoche	—			635	2	3
San Rafael	—			2185	7	6
Veta Bella	—			17	4	0
Loreto	—			65	7	6
La Celestina	—			1610	6	3
Disputed ground	4688	4	3	—		
Haciendas	2743	5	6	—		
	$11,146	5	3	$4515	4	2
Loss	4515	4	2			
Net profit	$6631	1	1			

PACHUCA MINES.—*June* 27.—The sinking of San Miguel shaft has been suspended, while a cross-cut is being driven south through the vein. One vara has already been driven; but it will require six or seven more to reach the main part. At Esperanza, we are still prevented from going to the bottom of the shaft, on account of the foul air, mentioned in my letter of last month; we have, therefore, in order to carry on the trial of this vein, resumed the driving of the 95 vara level, west of San Buenaventura. Capt. Trenear speaks favourably of Santa Susana—indeed, all our agents, and many of the Mexican miners here, form the same opinion of this mine. The branch containing ore is, however, very small; but the ley is excellent. Last week we got out about two quintals, which assayed about 30 mcs. per monton; and particular stones have assayed as high as 150 mcs. Seeing that a small quantity of this class of ore will pay the expense of carrying on this work, which is only about 24 varas deep from surface, I purpose continuing it for some time longer.

REAL DEL MONTE MINES.—*Mineral del Monte, June* 27.—I beg to acknowledge the receipt of your despatches of 30th April, which came to hand on the 17th instant. I duly note what you say respecting the funds in hand, and the necessity of making larger remittances from hence. I feel assured, however, that the directors are satisfied we have endeavoured to comply with their wishes in this respect. Although the returns for last month were good, amounting to $71,837, and leaving a profit of $8375, I do not make a remittance by this packet, as you will perceive, by the statement herewith remitted by the treasurer, the balance on hand here is very small. If the mines, however, continue as at present, and I see no reason to fear a serious falling off, I think I may venture to promise 10,000*l.* or 12,000*l.* remittance during the next six months of the year. By Mr. Spangenberg's letter to Mr. Taylor, herewith forwarded, you will perceive that the experiments are still progressing favourably, —although last month, owing to a want of knowledge on the part of the refiners at Regla, a great portion of the silver passed off with the slag: this, however, has been kept apart, and will undergo a second operation, by which means we hope to recover a great part of the silver. The cost of reduction by this method does not apparently pass $20 per monton, and even this Mr. Spangenberg expects to reduce 25 per cent., or to $15 per monton. Owing to the improvements introduced by Mr. S. in the calcination of the ores at Sanchez, the barrels have of late been giving a more favourable result than formerly, especially as respects the loss of silver, which last month amounted only to 6 per cent., whereas, during the previous four months, it averaged 14 per cent.: the loss of quicksilver, however, continues to be rather high, being about 4 ozs. per marc. The works connected with the erection of 16 new barrels at this hacienda are being completed with the greatest possible despatch, although, I

regret to state, not so fast as could be desired. The masonry of the wheel pit is finished, and the masons are at present employed building the front wall: the axle of the new water wheel is now being bound, and the carpenters will speedily commence putting the wheel together—indeed, all the work will now (I hope) proceed rapidly, although, I fear, it will not be completed before the month of August. At Regla, the result of the operations for last month were not so favourable as for many months previous, especially as regards the loss of quicksilver, which has again got up to about 17 ozs. per marc; while the tortas from La Luz and Santa Ynez exceeded 20 ozs.: the loss of silver, also, from the same was very high—the torta, No. 20, from La Luz, having lost 28 per cent., and No. 24, from Santa Ynez, 48 per cent. The latter having shown such a ruinous result, I have resolved to send no more ore from this mine for the patio process, but propose reserving it for the barrels, by which process it answers very well. There are at present 8 smelting furnaces at work in this hacienda, which will produce daily about 60 quintals, or 140 cargas per week; but the operations of the patio have been seriously interrupted owing to the want of quicksilver. I now beg to refer you for particulars respecting the general state and prospects of the mines to the letters of Capts. Rabling and Skinfill, herewith forwarded. The former, you will observe, gives a favourable description of the Santiago level west of Dolores (which has now passed through 23 varas of good ore ground), of the rise over the same, and of the San Pablo and San Enrique winzes, below San Juan, and of the Dolores in the immediate vicinity—all of which are yielding more or less a good quantity of smelting and azogue ore, as will be seen by the following statement:—Produce for the week ending June 6, 200 cargas azogue, 171 cargas fuego; June 13, 100 cargas azogue, 154 cargas fuego; June 20, 200 cargas azogue, 71 cargas fuego. It should be also noticed, that all the azogue ore is felled for the company without partido; besides this, a large quantity of ore is obtained by cleaning the attle. The reduced quantity of smelting ore, produced in the last week, was owing to a temporary suspension of the workings, occasioned by the rising of the water, while a new main rod was being attached to the Dolores engine, in the perpendicular shaft.

At Acosta, including the workings of La Luz, on the Santa Brigida vein, the raising of ore has also lately increased; the best point is still that of the bottoms of San Pascual, which you will observe, by Capt. Skinfill's report, produced in the last 13 varas sunk, 120 cargas of smelting ore, containing 14½ mcs. per carga, independent of the azogue ores, which are abundant. The winze is carried down 3 varas in length, and is now 28 varas deep; the ends of which have not yet been touched—so that I trust we have in this place a tolerably good reserve. As our circumstances have somewhat improved, I have resumed the sinking of Escobar shaft, which was suspended sometime ago in order to reduce the expenditure. I also propose to resume the driving of the adit south of Dolores, on the Santa Brigida vein; this, however, cannot be done until the San Ramon shaft is communicated to the adit level, as at present there is a want of ventilation. In case these works be carried on, they will explore the vein in points hitherto unexamined; and are, therefore, in my estimation, of great importance, especially that of Escobar, where, for the last 8 or 10 varas sunk, we have repeatedly found stones of very rich ore. The average ley of ores reduced from Rosiaro last month, as you will perceive by the monthly report of Sanchez hacienda, was very low—being only about 6 mcs. per monton; the silver produced amounted to 656 mcs., extracted from 3352 quintals of ore; estimating this at $8½, it amounts to $5576, the cost on which, including mines and haciendas, amount to about $5000. The low ley of the ore is, I think, in a great measure owing to a want of care in cleansing as it comes out of the mine. I gave orders, however, to suspend several of the labores, and continue those only which yields ores containing 9 mcs. per monton, and upwards; and I believe, from the arrangements recently made, we shall have better results in future. The estimate of costs and returns for June, forwarded by last packet, showed an anticipated profit of $11,400; the actual result, I expect, will be rather better. Estimate of costs and returns for July:—*Cost* (four weeks), $53,800; *returns* (55 bars), $66,000; *profit*, $12,200.

UNITED MEXICAN MINES.—*Guanaxuato, June 25.—Mine of Rayas.*—Mr. Glennie's report, accompanying this, will put you in possession of the present state of the workings of this mine. Santa Cecilia is certainly our most promising point just now—appearances there have improved. I annex statement of produce of the mine for the last five weeks:—

5 wks. end.	Picked ores.	½ amt. sales.	Outlay.	Excess of Outlay.
May 16.—Cs.	2677	$ 7,713 0 0	$ 24,404 4 7	$16,691 4 7
June 20. „	2495	10,534 0 0	20,705 6 4	10,166 6 4
	Cs. 182 Decrease.	$2,826 0 0 Increase.	$3,698 6 3 Decrease.	$6,524 6 3 Decrease.

Quicksilver.—I observe that you have shipped 810 bottles by the packet just arrived; but, in consequence of my stock on hand being so small, I have been obliged to purchase 60 bottles.

Remittances.—By the conducta, to leave this for the city of Mexico next week, I shall send $10,000 or $12,000 to our agents there—to be remitted to England in specie, or a bill of exchange, according to circumstances.—W. HEATH.

Report on the State of the Workings of the Mine of Rayas.

La Purisima.—The rubbish extracted from the old workings produces a small quantity of ore, which is divided with the ore dressers, who work on this account.

San Lorenzo.—The end that is being driven through the pillar in the north west side of these workings is about to be communicated with the road to the bottom of the mine: some threads and small bunches of a good class of ore have been extracted, but the general produce is of low ley. On the south-east side the ores are of an ordinary character; and to allow of these being extracted with safety, it is necessary to fill a large cavity (made when this part of the mine was originally worked) with rubbish brought from a higher part of the mine. Eight pare of barmen are employed by day, and nine pare by night. A small quantity of paid ore is being thrown down from a pillar on the south-east side of San Simon, by two pare of barmen, employed by day only; and some bunches of rich ore have been extracted from the pit of San Pablo, in S. Cayetano, in which a wall has been raised to secure the upper part of the lode.

San Miguel.—Although the produce of ore from San Dario has varied little in quality, the quantity has somewhat diminished since the last report. In one of the other points (San Pedro), some narrow threads of rich ore occasionally present themselves, but they are of short duration. Thirteen pare of buscones are employed by day, and an equal number by night.

Santo Toribio.—During the last month 7·36 varas have been driven in this cross-cut; a narrow vein of ore was cut through three weeks ago—situated between the centre and the south-east side, in which direction an end has been opened, with two pare of barmen by day and two by night; hitherto very little ore has been found, but it is intended to carry on the end for the present.

Santa Cecilia.—Since the last report 7·68 varas have been driven in this end. A change has taken place in the formation of the lode during the last week, with appearances more favourable than have hitherto been met with. There has been some improvement in several of the points, worked on joint account by buscones, which has, consequently, caused an increase of the amount of sales; but there is no one point that deserves any particular notice on the present occasion. The decrease in the amount of picked ores produced this month, as compared with the previous month, is to be attributed to the ordinary character of the ores from San Lorenzo, which form the bulk of extraction, and also the falling off in the produce of San Dario in San Miguel. The water in the great shaft requires the same number of malacates as usual; but it has been found practicable to slacken the pace of the horses a little, whereby they will get some relief.—G. R. GLENNIE.

[FROM CORRESPONDENTS.]

DEVON AND COURTNEY CONSOLS.—Since the last meeting of the company, important discoveries have been made in the mine, and which may be gathered from the letters of the captain, of which the following are extracts:—"*18th July*—I am happy to inform you, that there is a very great improvement in the adit end, the lode is about 18 in. wide, of good saving work, the lode is very hard (as it ought to be); but the ground by the side is favourable, so that we are driving the end for 4*l.* 10s. per fm. We have cut a branch in the shaft, underlaying north about 3 ft. per fm., 10 in. wide, composed of spar, mundic, and ore, which I consider very promising—for I am almost certain, that when the two lodes form a junction, there will be a bunch of ore; and by my calculation, if we drive at the depth of 26 fms., we shall meet with it. The branch is not running parallel with the lode, it appears that it will come together, somewhere about the gossan pit. The water is increased very much by cutting this branch, and it has been against the progress of sinking, as it was very hard to cut through; but the ground under, is just the same as it was above—a beautiful clean killas, and, I can assure you, I am very glad of it." "*25th July.*—I beg to inform you, that we drew up yesterday, 140 kibbles of orey work from the adit end, and left about 20 more, the lode in the end is 3 ft. wide, but not so good as it was on Thursday last: but still there is a good stone of ore in the end. I intend to sink a few fms. on the new north lode." "*August* 1.—It is with great pleasure, I have to inform you, that our new lode has improved in size and quality; it is 6 ft. wide, composed of gossan, flookan, mundic, and ore, for 18 in. wide, all saving work: in fact, it is as pretty a lode as can be seen to its depth, being only 18 ft. from the surface. The ground ran in last night, and I have been all this day securing and drawing up the stuff (what has fallen in is orey stuff). I have commenced to make two separate piles—best ore, and seconds. I hope, should it continue as it is, we shall have several tons of this ore to pile by the end of next week. Our deep adit end is looking kindly altogether, is 4 ft. wide, with a leader 6 in. wide, nearly all solid ore; the truth is, we never had such a kindly concern here before.—JOHN JON."

NORTH WHEAL FORTESCUE CONSOLS MINES are situate in the parishes of East Buckland, near South Molton, in the county of Devon, and have been worked for the last 11 months, by adventurers, principally residing in Devon and Cornwall, at a cost of nearly 5*l.* per 256th share. A winze has been sunk on the south part of the north mine (North Wheal Fortescue), to the depth of 10 fms., and a level driven a short distance west, on the course of the copper lode; but the water has been so quick, that the power available at present has been found impossible to keep the same in fork. An engine-shaft has also been sunk. At Wheal Priscilla, or the south mine, an adit has been driven, and the copper lode intersected on the 10th ult. On the north east part of the north mine, a shaft has been sunk to the depth of 15 fms., on a lode producing yellow copper ore, from whence 5 tons of ore has been sold. There are five east and west lodes, running through the North Wheal Fortescue sett, and the adjoining sett (Wheal Priscilla) was secured on account of these lodes taking a direction through it, which has been since confirmed, by cutting the south lode of North Wheal Fortescue. Efficient machinery, for the purpose of prosecuting the works in depth, is now in course of erection, the estimated cost of which is computed at about 1000*l.*; and to enable these operations to be carried into effect, it is proposed to increase the number of shares from 256 to 1024—and, with a call of 2*l.* per share, it is confidently anticipated, from the general appearance of the lodes, that no further calls will be deemed necessary. Specimens of the ore, with plans of the present, and proposed future workings, are to be seen at the offices of the company, under the superintendence of Mr. W. H. Smith, 10, Warneford-court, Throgmorton-street.

WHEAL ARVOSE (commonly called Wheal Harvest Mine).—The above-named mine, is situated in the parish of St. Stephen's, in Branwell, in the county of Cornwall; the lodes are the great Hewas lodes, and about half a mile to the west, and distant south of St. Austell Consols from 200 to 300 fms. This mine worked in 1826 by Capt. Clemes, who was the agent in Great Crinnis Mine, and from the similarity of the lodes, having as much gossan, mundic, jack, and spots of copper, as that of the Great Crinnis lodes on the backs, induced him to drive an adit nearly 300 fathoms in length, to cut the above-named lode, and sunk 4 adit shafts for air, which cost the adventurers upwards of 1500*l.*: the depth at the end of the adit from surface, is from 25 to 30 fms., and by a continuation on their course, nearly 40 fms. of backs can be obtained. Capt. Clemes' great object, was to see No. 2 lode, as described in the agent's report, at the adit level, having previous cut it in sinking a shaft about 10 fms. from surface, and, which is about 8 ft. wide; but, before he obtained his object, he was taken ill and died. Some of the adventurers being behind with their costs, it was resolved, at a meeting of the adventurers, to suspend operations for 12 months, which they did, when difficulties ensued, and the concern became abandoned. In 1837, Capt. Luke, who was the agent of the Polgooth Mine, resumed the former workings; the adit became choked, he commenced clearing it, finding the air bad at the end of the adit, he could do nothing in extending it farther. He, in November month, commenced sinking a shaft to the adit for ventilation; having gone down about 12 fms., he found the increase of water so much, that he was compelled to abandon it. He then put the men in No. 2 shaft to sink on the course of the lode from the 10 fm.; having sunk 6 fms., he found the lode changing its appearance, from gossan, mundic, and jack, to that of copper and greens—the water here prevented them from going deeper. It is remarkable to state, that Capt. Luke was taken ill and died also: some of the adventurers not being very rich, this party got into difficulty, when the mine again became abandoned. This mine has constantly been in the hands of parties since 1837, who held on the grants, and did scarcely any thing. Mr. D. Stickland, who, for the last 4 years past, had been trying to obtain the sett, did in the beginning of the present year purchase it, placed men to work therein, and began to form a company, and made no call on the adventurers till the discovery mentioned in the agent's report, in last week's Journal. At a meeting, held the 22d July, he offered the adventurers the chance of increasing their shares, when many of them doubled their interest.

WHEAL MEXICO.—At this mine they are driving south, on the cross-course, with four men, to reach the silver lode, at the 20 fm. level. Having lately passed through two small branches, containing white iron, flookan, and spots of lead, and the water being more abundant in the end, it is confidently expected, they are rapidly approaching the lode in question. If the lode should prove as rich in this part, as it did on each side of the eastern cross-course, where large quantities of wire silver, and also grey and ruby silver, ores were discovered, the adventurers will not regret their outlay.

WHEAL WALTER MINING COMPANY.

A meeting of the shareholders, in accordance with notice, was held at the secretary's offices, 4, King-street, Cheapside, on Thursday, the 6th inst.

HENRY SMITH, Esq., in the chair.

The SECRETARY presented the following report of the finance committee, which met the marked approbation of the shareholders present:—"The finance committee, appointed by the adventurers on 3d March, 1846, have now the pleasure of reporting to them the progress that has been made in working the mine, and its present condition and prospects. Immediately after the meeting of the 3d March, experimental workings were commenced, under the occasional superintendence of Capt. Jonathan Davey, of Wheal Susan, at a small remuneration, a permanent captain not being deemed requisite at that early period. The further development of the lodes having afforded indications of a more decidedly favourable character, a constant superintendence became absolutely necessary; and Capt. James Opie, formerly of Wheal Mary, was appointed captain of Wheal Walter, at a salary of 6*l.* 6s. per month. Early in July, Capts. Opie and Davey, and Capt. John Tabb, of Lamberoe Wheal Maria, were requested to determine on the expediency of erecting an engine, and furnished the following report, signed by Capts. J. Tabb, J. Opie, and Davie:—'Having been called on to inspect the above mine, for the consideration of future work, we, after seeing the many discoveries of lodes, and their highly promising character, do recommend the immediate application of a steam-engine, not less than 20 to 25 in. diameter of cylinder, for the purpose of giving a trial to the great C lode, to be placed on the London shaft.' The committee have, accordingly, purchased a portable engine, of 8-horse power, of Messrs. Beale, of Greenwich, for 260*l.*, who will forward the same to the mine without delay. The committee have much pleasure in stating, that the reports of the mine, by the captain and others, from time to time, have been of the most favourable and encouraging character; and there is every reason to anticipate, that Wheal Walter will, at no distant period, take its place among the most prosperous mining enterprises in Devon or Cornwall. All reports deemed interesting to the adventurers have been inserted in the *Mining Journal*, but the committee desire again to direct the attention of the shareholders to a letter from Capt. John Williams (published in the *Mining Journal* a few weeks since). A statement of the accounts of the mine will be submitted to the adventurers; and the committee beg, in conclusion, to tender the resignation of their trust, with a recommendation that the finance committee be remodelled."

The accounts showed the amount of calls as 1177*l.* 13s. 10d.—By costs for April, May, and June, 693*l.* 5s. 9d.; gratuity to Capt. J. Davey, 5*l.* 5s.; Deputation expenses of Messrs. J. J. Hays and H. Snell, 30*l.* 16s. 6d.; secretary's salary (four months), with postages, books, stationery, printing, advertising, use of office, &c., 22*l.* 8s. 2d.—together, 751*l.* 15s. 5d.—Arrears of calls July and August, 263*l.* 12s. 6d.; cash at bankers, 162*l.* 5s. 11d.—total, 1177*l.* 13s. 10d.

The following resolutions were passed:—That future meetings of shareholders shall be half-yearly; and that, previous to each, the accounts of the mine be audited; Messrs. J. Candler and J. Coulthart were elected.—That a call of 2*l.* per share be made; 1*l.* made payable from the date of the circular, to be issued by the purser, and the second 1*l.* at the discretion of the committee.—The following gentlemen were then elected as the future finance committee:—Messrs. J. D. Poole, J. J. Hays, Henry Smith, Peter Davey, John Edwards, W. Morrison, J. J. Jerdein, W. Pegg, and W. C. Hall.—The thanks of the meeting having been given to the chairman, the company separated, appearing highly pleased with the proceedings and prospects of the management.

BOTALLACK MINING COMPANY.—At a two-monthly account meeting, held on the 21st July, it was shown that the labour cost had been 1244*l.* 17s. 2d; merchants' bills, &c., 503*l.* 3s. 4d.—1748*l.* 0s. 6d.—By copper ores sold, 117 tons 10 cwts. 2 qrs. (less 41*l.* 18s. 2d. dues), 712*l.* 10s. 3d.; tin, 33 tons 7 cwts. 9 lbs. (less 88*l.* 16s. dues), 1685*l.* 4s. 6d.; sundries, 3*l.* 6s. 6d., which, with balance in hand last account of 47*l.* 11s. 3d., makes 2875*l.* 12s. 6.: leaving in purers's hands, 1127*l.* 12s.

CARADON WHEAL HOOPER MINING COMPANY.—At a meeting of adventurers, held at the mine, on the 28th July, a call of 1*l.* per share was made. The following report from Capt. John Seymour was read to the meeting:—"Two months since, I reported that the shaft was sunk 30 fms. from surface. Since that time, a whim plat has been cut, and a cross-cut driven south 10 fms., in which we have intersected Dawe's lode, and which is found to underlay 2½ ft. in a fm. At the point at which Dawe's lode was cut, it was small; but having driven east on it about 5 fms., I find it full 2 ft. wide, composed principally of spar, prian, mundic, and peach, interspersed with spots of copper; 5 ft. further south, we intersected a branch 10 in. wide, which will drop into Dawe's lode at about 3 fms. below the present level, and at which junction the lode will probably be found much improved. The cross-cut north has been driven towards the saw-pit lode 9 fms., and I expect to cut it in about 4 fms. more. The shaft can now be sunk for 13*l.* per fm., which will allow us quickly to get to a depth where the lodes will in all probability, prove productive."

SOUTH ST. GEORGE MINING COMPANY.—A meeting of adventurers was held at the mine, on July 23, when it was resolved,—That the statement of accounts—showing a balance against the adventurers, of 241*l.* 0s. 6d.—having been exhibited and examined, should be allowed; and that such balance be divided and collected.

WHEAL ANDREW AND NANGILES MINING COMPANY.—A meeting of adventurers was held at the mine, on the 20th July, at which the accounts were produced, showing the working expenses to have been 1354*l.* 4s.; balance at last account, 1082*l.* 15s.—2436*l.* 19s.—By deposit of 4*l.* per share, 940*l.*; copper ore sold (less dues), 268*l.* 6s. 8d.; black-jack, 67*l.* 5s. 2d.; tin, 311*l.* 11s. 9d.; mundic, 58*l.* 18*l.* 9d; error in November cost, 5*l.* 8s. 1d.: together, 1651*l.* 10s. 5d.; leaving balance against the mine of 785*l.* 9s. 6d.—The accounts were passed—a call of 4*l.* per share made—the purser authorised to recover outstanding claims—and interest of 5 per cent. to be charged on all calls not paid one month from their being made.

WHEAL BUCKETTS MINING COMPANY.—A three-monthly meeting of adventurers was held at the mine, on the 21st July, when the accounts were passed, and a call of 5*l.* per share made.—The costs and merchants' bills for April, May, and June, had been 966*l.* 10s. 3d.; with balance of last account, 1897*l.* 14s 3d.: making 2864*l.* 4s. 6d.—By call of 5*l.* per share, 1280*l.*; copper ores sold (less dues), 75*l.* 16s. 5d.; leaving present balance against the mine, of 1508*l.* 8s. 1d. It was resolved,—That the debt of 500*l.* due to Messrs. Ricketts, and Co., with interest, be paid.—The following report from Capts. W. Webb and J. Pope was read to the meeting:—"The 20 fm. level, east of Buller's shaft, is driven about 50 fms., the lode is 15 in. wide, composed of mundic, spar, and ore, a very kindly lode for the last 15 fms. The 30 fm. level, east of Buller's shaft, is driven about 45 fms., the lode is 18 in. wide, with good stones of ore. This level has been driven several fathoms through a very kindly ground. Buller's shaft is now at the 30 fm. level, the lode is about 2 ft. wide, and orey throughout, good tribute ground. The 30 fm. level, west of the engine-shaft, is driven about 24 fms., the lode is small and poor. The 42 fm. level, east of the engine-shaft, is driven about 12 fms., the lode is 20 in. wide, with good stones of ore and tin. The 42 fm. level, west of the engine-shaft, is driven about 6 fms., the lode is 3 ft. wide, poor. There are several fathoms of tribute ground driven through in the 20 fm. and 30 fm. levels, which we recommend setting on tribute at once; also, that a cross-cut be driven north, at the 30 fm. level, to intersect a north lode, which would be cut in about 20 fms. driving; and, as soon as the water is drawn down in Buller's shaft, which we expect very shortly, then to sink that shaft below the 30 fm. level with all speed, which is now in good orey ground."

CHYPRAZE MINING COMPANY.

As the conduct of both purser and captain has been, in the opinion of the London shareholders, most unsatisfactory in respect of their management of this mine, we give insertion to the following correspondence and statistics relating thereto, for the information of the public, and with a view to those officers affording any explanation they may wish—the more requisite from it being confidently stated, that they sold their own shares at a time when the mine, by their representations to the public, was in a most flourishing condition, but which, from subsequent statements, was so far from being in a prosperous state, that it has ever since been worked at a considerable loss.

On the 26th of December, 1845, the following report was sent by the managing agent of the mine:—"When I saw you at Truro, on Wednesday last, it did not occur to me, that you were a perfect stranger to Chypraze Mine, and, therefore, was not in a position to estimate her real worth; I beg leave, therefore, to hand you the enjoined brief report, which will be sufficient to show that she stands on a very staple foundation, and is every way worthy of more consideration than is generally believed. The following is the report to which I refer:—Value of materials on mine, 1600*l.*; tin on surface, about 20 tons, at (say) 63*l.* per ton, 1260*l.*; cash in purser's hands, 700*l.*; tin ground laid open sufficient for making a profit of 200*l.* per month for 6 months, at an average tribute of 4s. in the 1*l.*, according to present prospects, 1200*l.*—total, 4760*l.* The tutwork ends are looking very well indeed, particularly in the 56 fm. level, where we have an excellent course of tin. The mine is situate at the foot of a granite hill, in a beautiful strata of ground, soft white killas, granite, and elvan. The average price of driving the ends is 40s. per fm., and very little timber is required. The tin-stuff rises very rich; and we have returned as much as 10 tons 14 cwts. of tin per month with a small three head stamps, and can still do the same again. The monthly expenditure of the entire mine is about 200*l.* on an average, including bills; and the expense of dressing is only 1*l.* per ton. There are two regular lodes, averaging from 1 ft. to 2½ ft. in width; and the metal returned in the last 18 months is about 5000*l.* worth. If you like to have a couple of shares in 100*l.*, you may have them at any time, before *Wednesday evening, at six o'clock*, but not afterwards; neither can I take at any figure below that—waiting reply—JAMES MITCHELL: *Truro, Dec. 26.*."

The adventurers met the latter end of January, and declared a 7*l.* 10s. dividend, when the purser congraluted the shareholders upon the prosperous state of the mine, and promised a 10*l.* dividend for the ensuing quarter, whilst the captain assured the shareholders, from the productive tin ground laid open, he could guarantee them three such dividends consecutively. On the 28th of March last, the following letter was written the purser:—"I, and my friends, have several shares in Chypraze Mine—will you be kind enough to inform me the present prospects of the adventure, and state, as far as possible, the probable prospects during the next 12 months, whether a 10*l.* dividend will be given next meeting, an engine required, or any additional expenditure in developing the mine?"

In reply to which the purser wrote as follows:—"In reply to your favour of the 28th inst., I beg to inform you that in the 50 fm. level, on the caunter lode at Chypraze, we have had very good tin ground. In the 30 fm. level west we have cut through a cross-course, and had good tin on the other side. A cross-cut is being driven to intersect Mitchell's lode, at the 46 fm. level, where we hope to find the lode productive, from appearances upwards. In the 16 fathom level east we recommenced driving about three weeks since; the ground is much improved, and is now producing tin. We hope shortly to intersect a north and south lode at this level, which has a branch of lead 6 inches big in the shallow level above. The dividend at the next meeting will not be above 5*l.* per 118th, in consequence of our having been obliged to put in an additional boiler, &c. There is no prospect of our requiring another engine for some time, nor have I any idea that the cost will increase. Our cost for the last 18 months has not averaged 200*l.* per month, bills included.—*Truro, March* 30."

On 1st May, the adventurers met, when a 3*l.* dividend per 118th share was declared:—"At a meeting of Chypraze Mine adventurers, duly convened and assembled at the mine, on Friday, May 1, the accounts, showing a balance of 355*l.* 19s. 10d. in favour of the adventurers, having been seen and allowed, it was resolved:—'That a dividend of 1*l.* 10s. per 256th share be declared, and paid out of the above balance.'"

On 15th May, the following letter was sent the purser by one of the largest shareholders:—"From the tenor of your letter to Mr. R. Tredinnick some time back, I was led to believe I might expect a larger dividend than 30s. per 256th share in Chypraze, accompanied, as it is, with so large an expenditure for the last three months: intend any explanation to the adventurers how it arose. Holding, as I do, 12 118ths, including two I purchased yesterday, I am desirous of being informed of the state and prospects of the mine—and have, therefore, given Mr. N. Tredinnick an order to inspect her, which I hope you will allow him to do at his pleasure, so long as I hold so considerable a portion. It is reported that you have cut the lode rich in the 46 fm. level; as I do not want to lessen my interest in the mine, I should be greatly obliged if you would forward me correct information respecting it, and also a list of the present shareholders. I feel myself entitled to the earliest information of any improvement, and shall take it as a great favour if you would furnish me with it at your earliest convenience."

The undermentioned letter was received in answer:—"I have to acknowledge the receipt of your favour of the 15th—and, in reply, beg to inform you, that the expenditure in Chypraze Mine has been heavier than usual during the last quarter, in consequence of the engine requiring a new additional boiler—this, combined with the fall in the price of tin, prevented the dividend from being more than 30s. per share. At the end of January, our best tin sold at 65*l.* 10s. per ton, and in April at only 53*l.*, the remaining parcels at a price proportionally less. Your agent, Mr. Tredinnick, will be permitted to inspect the mine at any time; a written order from you will be requisite. Capt. Michell, the superintending agent, gave me a favourable report of the mine on Saturday—and stated that the lode in the 46 fm. level continued to produce very fine tin, and that the pitches in the other parts of the mine were looking well. On the other side I send, as requested, a list of adventurers.—H. S. POWELL: *May* 18."

Extract of a letter, received May 22:—"Capt. Michell informed me, on Wednesday, that the lode in the 46 fm. level continued to look very well; but, I regret to say, that there has been another fall in the price of tin.—H. S. POWELL."

After this no further communication took place, till the receipt of the following circular and report, when the astonishment of the shareholders may be better understood than described—"Having been informed, by the agents, that the prospects of the mine do not warrant the further prosecution of the works, I beg to hand you the report of Capt. Evans, of Budnick Consols, who inspected the mine, on the 13th current, and to inform you that a meeting of the adventurers will be held on Wednesday, 22d inst., at Pearce's Hotel, Truro, at four p. m., to take into consideration the propriety of immediately stopping the mine, and drawing up the materials, to be sold by public auction.—H. S. POWELL."

"Having been requested by the adventurers to inspect this mine to-day, I went through the underground department, and found the mine to be sunk to the 56 fm. level; but there appears to be a gradual falling off in the prospects going downwards, and at the present depth the mine is very poor, the lodes being small, and the strata getting harder in depth; I am sorry to add, it is my opinion that the sooner it is shut up the better.—JAMES EVANS: *Truro, July* 13."

In accordance with which notice, the meeting was held, the result of which the following statement and report will describe:—"At an adjourned meeting of Chypraze Mine adventurers, duly convened and assembled at Pearce's Hotel, Truro, on the 28th of July, the purser having reported that Capt. Barrett, who was nominated to inspect the mine, could not attend for that purpose within a fortnight, and that the mine had been inspected by Captain Robins, of Beam Mine, on the 23d inst., whose report was read, it was resolved:—'That Chypraze Mine be forthwith stopped, and that the materials be sold by the agents, either by private contract, or by public auction, and that Mr. Edsall be the auctioneer.'—'That the report on the state of the mine made by the purser on the 18th or 19th of May last, to Mr. Haywood, was fully justified by the report of the agent of the mine at that period, and that it appears, on reference to the transfer book, that the purser has not sold any of his shares in this mine since the 30th of March last.'"

"*July* 23.—By your desire I have very carefully inspected this mine, and also examined the several departments connected with it. The following is the result thereof:—The appearance of the ground at the deepest level, being

56 fms. from surface, has an unfavourable appearance, and the produce of the lodes evidently decrease in quantity and quality as they increase in depth. The appearance of the levels above the 56 do not present anything to justify further expectations of profit; and, under the present circumstances, I do not think you can continue to work, after every expense is reduced to its lowest figure, without having a heavy monthly loss. In my opinion, therefore, the sooner the operations are suspended the better it will be for the adventurers.—SAMUEL ROBINS."

	Produce.					Sales.					Cost.		
January	*Tons*	4	4	0	0	*Tons*	8	13	0	27	£251	1	1
February		3	17	2	26		8	18	3	24	185	17	4
March		2	4	2	26		7	4	3	19	166	7	11
Total	*Tons*	10	6	1	24	*Tons*	24	17	0	24	£603	6	4

Which, with merchants' bills, 348*l.* 11s. 7d., makes 951*l.* 17. 11d. Amount for tin sold, 1299*l.* 14s. 1d.—thus leaving a profit of 347*l.* 16s. 4d.—From the above statistics, it will be seen that, whilst a profit of 347*l.* 16s. 4d. appeared on the cost book for the quarter ending March 31, an actual loss of between 400*l.* and 500*l.* occurred upon the three months' working; and, again, for the quarter ending 30th of June:—

	Produce.					Sales.					Cost.		
April	*Tons*	3	1	2	13	*Tons*	5	13	1	24	£145	17	7
May		4	8	0	0		4	17	1	6	217	14	6
June		2	13	0	0		3	17	3	26	176	2	1
Total	*Tons*	10	2	2	13	*Tons*	14	8	3	0	£539	14	2

Which, with merchants' bills, amounting to 168*l.* 3s. 10d., makes a total cost of 707*l.* 18s. Tin sold, during the quarter, ending the 30th of June, 647*l.* 16s. A loss of 60*l.* 2s. is thus shown—whilst the sales being an increase of two-fifths on the produce of the mine, the real loss was considerably more—in fact, the cost of working for the last six months has been 1659*l.* 15s. 11d., whilst the produce has only been 209*l.* 0s. 9d.: from this it will be seen, when the 7*l.* 10s. dividend was declared in January last, they lost 200*l.* upon that month's working; and again, in May, when the 8*l.* dividend per 118th share was declared, an actual loss upon the working of the mine occurred—in the face of which a dividend was promised for the June quarter, and the adventurers were in total ignorance of the losses incurred during the last six months, until called together to stop the mine.

Before we go into the "facts and figures," and the proceedings in this mine, we merely give the correspondence as we have received it—thereby affording the parties *officially* interested an opportunity of explaining from what source the dividends were made, and the object the parties had in declaring the said dividends, when the mine was working at a decided loss. At a period when we are holding up mining as a source of profitable speculation and secure investment, we would desire—for the honour of the county, for the character of the principals concerned, and for the credit of the mining interest generally—that a satisfactory account can be given, and we trust it may.

ENGLISH AND FOREIGN MINING SPECULATIONS.

[From the *Morning Post.*]

The recent mineral discoveries in Australia, together with the extraordinary success which has attended the Wheal Maria (now denominated Devonshire Great Consols), and other mining undertakings in this country, have caused much attention to be directed of late to metallurgical matters generally, we are induced to allude to a statement in the *Mining Journal*, headed "Successful Mining Adventures." It is an account of the dividends paid by 20 British mines during the six months ending June last. The total is 82,734*l.* The highest is on the East Wheal Rose (lead mine), being 19,200*l.*, or 150*l.* per share. The items are as follows:—Devonshire Great Consols, 22,528*l.*, or 22*l.* per share; East Wheal Rose, 19,200*l.*, or 150*l.*; Carn Brea, 6000*l.*, or 6*l.*; West Caradon, 5760*l.*, or 22*l.* 10s.; United, 4000*l.*, or 40*l.*; Wheal Seton, 4455*l.*, or 45*l.*: South Caradon, 3840*l.*, or 30*l.*; Wheal Trelawney, 3120*l.*, or 12*l.*; North Roskear, 2450*l.*, or 35*l.*; Balleswidden, 2040*l.*, (the amount per share is not given); Callington Mines, 2000*l.*, or 2*l.*; Botallack, 1500*l.*, or 15*l.*; Trenow Consols, 1280*l.*, or 5*l.*; Chypraze, 1239*l.*, or 10*l.* 10s.; Trethellan, 1200*l.*, or 10*l.*; Stray Park, 1000*l.*, or 1*l.*; Treviskey, 960*l.*, or 8*l.*; Tresavean, 768*l.* or 8*l.*; West Providence, 384*l.*, or 1*l.* 10s.; and Wheal Brewer, 360*l.*, or 3*l.* per share.

In the general share list of mines, also inserted in the *Mining Journal*, neither the number of shares nor amount subscribed is given with respect to the Balleswidden mines, nor in reference to Trenow Consols, Chypraze, or Wheal Brewer mines, is the capital stated; so that we are unable to draw an average of the dividend of the before-mentioned 20 mining undertakings, as compared with the money subscribed; but deducting Balleswidden, Trenow Consols, Chypraze, and Wheal Brewer, the remaining 16 show an invested capital of 169,156*l.*; and the amount of dividends declared being 79,165*l.*, it follows that the average is 46*l.* 15s. per cent. for the half-year, or equal to 93*l.* 10s. per annum. The capital of these 16 mines, estimated by the number of shares in each undertaking, and the market quotation of price, amounts to 1,423,295*l.* The shares of these mines are in one instance only quoted at a discount—namely, the Stray Park, the market price being 21*l.*, and the amount paid up 43*l.* The others, on the contrary, command a premium, and some a very high one. The Devonshire Great Consols, are 700*l.* (1*l.* paid); East Wheal Rose, 1000*l.* (50*l.* paid); Carn Brea, 110*l.* (15*l.* paid); West Caradon, 325*l.* (20*l.* paid); United Mines, 800*l.* (300*l.* paid); Wheal Seton, 825*l.* (150*l.* paid); South Caradon, 400*l.* (10*l.* paid); Wheal Trelawney, 135*l.* (7*l.* 10s. paid); North Roskear, 400*l.* (10*l.* 10s. paid); Callington Mines, 20*l.* (19*l.* paid); Botallack, 200*l.* (175*l.* paid); Trethellan, 40*l.* (5*l.* paid); Treviskey, 120*l.* (61*l.* paid); Tresavean 250*l.* (10*l.* paid); and West Providence, 40*l.* (34*l.* paid.)

The value of the Wheal Maria Mine sett has been developed in a most rapid manner, and so successful have been the workings, that although the undertaking has not been in existence more than two years—we believe not so long—from the formation of the company, an unusual quantity of ore has been sent to market. During the quarter ending June 30, copper to the amount of 4809 tons was sold, and realised 31,864*l.* 19s. 6d., as shown in the *Mining Journal* of the 18th inst.; the quantity of copper ore disposed of during that period from 48 mines being 36,479 tons—so that this extraordinary mine furnished upwards of one-seventh of the whole. The shares of this undertaking have been done, we are informed, at upwards of 1200*l.* per share; and it is said, that a gentleman well known in the City, especially in connection with the Portuguese trade, is the holder of 30 original shares—whilst rumour, if it speaks correctly, declares that he refused 30,000*l.* for the same.

The East Wheal Rose Mining Company is another instance of great prosperity. The shares, until lately, have been quoted at 1300*l.* (50*l.* paid); but owing to the dreadful accident which took place at the works a short time since, by the sudden filling up of the shafts with water during a thunder storm—an effect of the bursting of a water-spout, it is imagined—which has, of course, most materially injured the property, and retarded the workings, the value of the shares has receded to 1000*l.*, which, nevertheless, is a premium of 950*l.* Most of the mining companies are conducted under what is termed the "cost-book" system—a system which has existed from time immemorial in the mining districts. It is remarkably simple, and limits the responsibility of the shareholder. There is no law whatever bearing on it. It is a custom which has become *quasi* law, and is recognised as such; for the 63d section of the Act for the Registration of Joint-Stock Companies (7 and 8 Vic., cap. 110) declares—"Provided always and be it enacted, that nothing in this Act contained shall extend, or be construed to extend, to any partnership formed for the working of mines, minerals, and quarries, of what nature soever, on the principle commonly called the cost-book principle." We may, on a future occasion, enter more fully on this subject.

On another occasion, the well-informed writer introduces some remarks on the favourable turn taken in the affairs of the General Mining Association [see another column], and then adds:—

On a future day we may have space and leisure to take a brief survey of the position of some of the North and South American Mining Companies, and of the sums sunk in the establishment of them. They are now all but a dead letter, and are seldom, or ever, inquired after. They are, for good reasons, no longer a favourite species of investment with the public—domestic mining undertakings having done much to supersede them, many of which, situated in the west of England, have, as shown in our former article, proved eminently successful. Railway enterprise has, however, done much to check the progress of mining operations generally.

More attention is paid to mining shares, but without a corresponding improvement in prices. Those of some of the recently-formed companies were, however, done at a premium.

We promised to take a brief survey of some of the foreign mines, and of the sums sunk in them: we now do so, and the picture which they present is much more deplorable than we anticipated. Prudent and thinking men have at all times deprecated the principle of embarking British capital in foreign enterprise, more especially in cases where the same object could be attained by employing the money at home, and giving employment to our own countrymen. It is not national, nor Englishman-like. It is, indeed, the "Foreigners' Land Improvement System," as was happily remarked by a Protectionist Member in the House of Commons, when speaking against the abolition of the Corn Laws; and the non-success which usually attends these anti-English efforts seems only a proper and just reward.

If anything were wanting to prove the baneful effects which accrue to British interests by encouraging foreign enterprise, and laying out money in matters where there are no means of personal or proper surveillance—whether in articles of consumption or general merchandise—which not only derange the whole monetary and commercial system of the country by the exportation of specie, but lead to the utter ruin of hundreds of families—the fact could not be more forcibly elucidated, than by calling attention to the enormous amount of British capital which has been absorbed in only a few of the many foreign mining undertakings, and pointing out the present value of the capital so embarked.

In a former article in mining affairs, and on the authority of the *Mining Journal*—a paper almost exclusively devoted to metallurgical subjects—we were enabled to show that the capital invested in 16 English mining associations was 169,156*l.*; and the market value of the same being 1,423,295*l.*, the increase is 1,254,136*l.*, or 750 per cent. We have now taken, as a contrast, the same number of foreign mining companies (the whole number inserted in the list of the *Mining Journal*, and which we, consequently, presume are the principal foreign undertakings), from which it appears, that the sum embarked in this manner is 5,452,494*l.*, while the value in the market is only 1,446,935*l.*, being, therefore, a depreciation or loss of 4,005,559*l.*—an amount equal to 80 per cent. of the money advanced.

The following are the names of the companies from which this result is arrived at, and we also furnish the present value, as well as the amount paid per share—namely: Alten, 1*l.* 15s. (paid 14*l.* 10s.) per share; Asturian, 3*l.* (paid 6*l.*); Anglo-Mexican, 3*l.* (paid 100*l.*); ditto subscription, 4*l.* (paid 25*l.*); Balanos, 4*l.* 15s. (paid 150*l.*); ditto scrip, 5*l.* (paid 15*l.*); Brazilian Imperial, 4*l.* (paid 20*l.*); Cobre Copper, 23*l.* (paid 40*l.*); Colombian (Registered) 4*l.* 15s. (paid 55*l.*); Copiapo, 2*l.* (paid 14*l.*); General Mining, 15*l.* (paid 20*l.*); Mexican, 5*l.* (paid 59*l.*); Mocaubos and Cocnes, 8*l.* 10s. (paid 25*l.*); Real del Monte, 3*l.* 15s. (paid 28*l.* 15s.); Royal Santiago, 11*l.* (paid 10*l.*); Pachuca, 3*l.* 10s. (paid 3*l.*); St. John del Rey, 10*l.* 10s. (paid 15*l.*); and United Mexican, 3*l.* 10s. (paid 28*l.* 5s.)

In the preceding list there are only two quotations of premium, the Royal Santiago being 11*l.* (10*l.* paid), or 1*l.* prem., and the Pachuca Mines, 3*l.* 10s. (3*l.* paid), or 10s. prem., while in the enumeration of the 16 English companies in our former article, there was only one instance of the shares being at a discount—namely: the Stray Park—the quotation being 21*l.*, and the amount paid up 43*l.*, or 22*l.* dis.

These remarks and calculations are based on the statement given weekly in the *Mining Journal*, and the quotations of Saturday. The shares of the General Mining Association have been quoted, since Saturday, at 16*l.* to 18*l.*, including the recently declared dividend of 80s. per share, so that the price of Saturday (15*l.*) may be assumed as a correct estimate—more especially as in drawing our conclusions respecting the home mine, we did not include the dividends, although, as we have stated, they amounted to the enormous sum of 93*l.* 10s. per cent. per annum. Neither do we include in the present remarks the call now made of 1*l.* per share on the Asturian Mines, which will, when paid, increase the invested capital to the extent of 15,000*l.*

MEDICINAL USE OF OIL IN COPPER WORKS.

SIR,—Some years ago, a Mr. Hugh Edwards, the manager of some copper smelting works formerly existing at Hayle Copperhouse, used to distribute to the men on the works a small quantity of oil each, to counteract the effects of the arsenic, or other metallic poisons, evolved during the process of smelting, &c. Probably some of your readers can, and will, supply some useful information on this head, especially as it is written, "At the hand of every man's brother will I require the life of man!"—A. T. J. MARTIN: *Penzance, Aug.* 1.

CENTRAL AMERICA—MOSQUITIA.

[FROM A CORRESPONDENT.]

This territory lies along the coast of the Carribean Sea, from Cape Camaron, in the Bay of Honduras, to the lagoon of Chiriqui, and is separated from the united provinces of Central America by a boundary, not very accurately defined, but extending in some places 500 miles inland; it is supposed to contain about 40,000 square miles. It was in this district that the aborigines collected when the Spaniards had driven them from the other parts of their country, which they were more desirous of occupying; and they have ever since enjoyed and still continue to possess, the independent holding of the soil. Most of these tribes of native Indians acknowledge the king of Mosquitia as their sovereign, and he is usually crowned at Belize, an adjoining British colony, where the coronation of the present king took place two years ago, in the presence of the superintendent, who was deputed by the British Government to make certain presents to the king on that occasion. These Indians are said to be a peaceable, but indolent, race—and who, from having mixed so much with the English, desire to be under the protection of England; for that purpose, the sovereignty of their country was offered by the late king to Great Britain, but declined. Recent travellers, in speaking of this part of the world, say that the whole of Central America is situated between the tropics; but as the surface of not less than one-fourth rises to a great elevation above the sea (4961 feet), forming a table land, the climate varies very much—a person who at daybreak leaves a district, where the thermometer ranges from 28° to 30°, may by noon arrive at another, where the usual temperature varies from 80° to 86°. No portion, even of the table land, can be called cold. It freezes during the night in November, December, and January, but only very slightly; the rainy season lasts nine months in the neighbourhood of the table land, but near the coast of the Carribean Sea *they have refreshing rains during all parts of the year*; the rains are generally not heavy, and contribute greatly to render these countries extremely fertile. The climate of Central America being so various, the productions are equally diversified. On the higher part of the table land, the grains (especially the wheat and barley), the fruits, and the vegetables, of Europe, are grown. In the lower and warmer districts, the common grain is Indian corn, which yields annually two or three very abundant crops; there are also found here the sugar cane, and the plants producing indigo, cochineal, tobacco, cocoa, and cotton; cochineal is chiefly gathered in the Spanish portion of the table land—it is here, and at Oaxaca, in Mexico, that this insect is gathered in such large quantities.

The forests, which cover a vast portion of the lower districts, produce mahogany, pimento, and Brazil wood; in the upper districts the oak grows; cattle is the principal wealth of some extensive places within the Spanish territory, where there are estates that feed from 20,000 to 30,000 heads; and sheep are numerous in their portion of the table land. Gold, silver, iron, lead, and mercury, are known to exist in Central America; but no mines are worked, except gold, silver, and iron. The most important mines of gold and silver are in Costa Rica, at the southern extremity of Mosquitia, and in Honduras, its northern extremity—consequently, it is not unreasonable to suppose, that they may be worked in Mosquitia likewise.

The present king of this country is a minor; and, as will be seen by the following proclamation, has for his guardians several English gentlemen, who were appointed under his father's will. It appears, from this proclamation, that this fertile, but hitherto almost unknown, country is attracting the attention of the British colonist; but although we think that, under judicious management, such a colony would be eminently successful, we nevertheless think it our duty to caution the public,—and to explain to them, that this region is still almost in a state of Nature, that the number of Europeans within it is extremely small, and that there are no towns or villages where houses, or the necessaries of life, can be procured on their first arrival. All settlers must, therefore, provide themselves with both shelter and store of provisions; for it will be some time before they can locate themselves to their satisfaction, build houses, and procure a crop of provisions. Many years ago, two attempts were made by Englishmen to settle in this country—they had neglected to take those necessary precautions, and the results were most calamitous—without any shelter, and without proper food, they fell victims to the climate.

We have the means of knowing, that the guardians of the young king are not only anxious to give every assistance in their power—but, from their personal knowledge of the country, are competent to give valuable information. We, therefore, trust that all persons who are desirous of procuring grants in this country will not neglect our advice in furnishing themselves with proper supplies before they proceed to their destination—otherwise, they may be sure they cannot prosper in the present rude condition of the country. But if they will proceed under the advice and guidance of the guardians, they will possess the strongest guarantee for continual success.

PROCLAMATION.

We, George, by the grace of God, king of Mosquitia (otherwise called the Mosquito territory), acting by the advice of the guardians appointed under the will of our late father, Robert Frederick, king of Mosquitia, do ordain, and it is hereby ordained accordingly—

1. All persons, not being our natural born subjects, who claim the right of holding land in perpetuity within our kingdom, by virtue of grants from the crown, shall, without loss of time, produce before us, or before the guardians aforesaid, their several grants, or such other papers on which they found their claims, for the purpose of being registered.

2. All grants of land that shall appear to us, or to the guardians aforesaid, to have been justly and properly obtained, or to which the parties shall be found to have otherwise an equitable title, shall be registered in the offices of Government at Bluefields.

3. The occupation of land by all persons not being natives of our kingdom, which shall not be duly registered as aforesaid, is illegal, and such land shall again revert to the crown.

4. All our magistrates are directed to facilitate the registration of grants within their respective jurisdictions, and to dispossess and expel from their usurped lands all occupiers (not being natural born subjects of our kingdom), whose claims have not been duly registered.

5. Claims for registration may be made, at the option of the claimants, either at the residence of Mr. David Kilpatrick, clerk of the court at Bluefields, or in England, at the office of Messrs. Barron and Smith, army agents, No. 4, Upper Charles-street, Westminster, London.

In the name of the king:

GEORGE HODGSON, Acting Commandant.

Court-House, Bluefields, Feb. 12, 1846.

IMPROVEMENTS IN CONCENTRATION OF SULPHURIC ACID.—From the inconvenience which has long been experienced in the ordinary process of concentrating sulphuric acid in glass vessels, from the frequent breaking of the glass, and the great care required to keep the hot vessels from draughts of cold air, Mr. Jones, chemist, of Bristol, has obtained a patent for inclosing them in what he terms a protector, made of sheet-iron, tin or other suitable material, not liable to be injured by the heat of the process; it may be cylindrical, square, or any other figure, provided it completely envelopes the glass vessel; it should be 5 in. or 6 in. larger in diameter, so as to inclose the glass in an atmosphere of hot air during the operation. By this means the process will be shortened, a considerable saving in fuel and labour be the result, and the glass vessels last much longer

LESLIE'S IMPROVED GAS BURNER.—A patent has been secured by Mr. Leslie, of Conduit-street, for an improved gas burner; it consists of a hollow circular ring, with an arm, by which it is screwed to the supply pipe; instead of the combustion of the gas taking place at small orifices around the upper surface of this ring, there arises from it a number of small tubes, curving inwards as they ascend, and the tops approaching very near each other in a circle—the whole forming the figure of a sugar loaf, denuded of its apex; a glass chimney covering the whole in the usual way. By this arrangement every single jet is completely surrounded with atmospheric air, and a free current is secured, between the tubes and through the centre of the flame, for each jet, when alight joins the others—forming a circular hollow flame of great brilliancy: the tubes may be of metal, glass, or porcelain.

A splendid iron steam-ship of about 1300 tons burthen, built for the Peninsula and Oriental Company, will be launched from the building-yard of Messrs. Vernon and Co., Liverpool, to-day (Saturday).

FORMER CONNECTION OF GREAT BRITAIN WITH THE CONTINENT.—"The Godwin Sands were the broad lands and fruitful possessions of Earl Godwin, father of King Harold, nearly down to the Conquest; and, though we have no historical trace of the fact, yet it is geologically and physically certain, that this island once formed an appendage to the Continent, being joined to it by an isthmus where now are the Straits of Dover. The chalk ridge, which has been abraded by the current and the action of the tides betwixt Shakspeare's Cliff and the similar formations of the high grounds above Boulogne, can still be traced by the sounding line: and Verstegan feels persuaded, that we should never have required Edgar's prudent care in offering such liberal rewards for the extirpation of wolves, unless those ferocious animals could have found a passage into the island by land, as no man could have been so senseless as to have imported them.—*Monthly Prize Essays.*

THE GREATEST IRON GUN EVER CAST YET.—Yesterday afternoon, another stupendous piece of ordnance was cast at Alger's Foundry, South Boston, which, when finished, will exceed Capt. Stockton's celebrated "peace-maker" by 5000 pounds in weight. The arrangements for the operation were commenced in the morning, by filling the furnaces with metal, and firing up. The quantity of metal used was about 46,000 pounds; and the amount of coal consumed, in reducing it to the requisite state of fusion, was eight chaldrons. At 6 o'clock, p.m., repeated experiments having been made with it in small quantities, the metal was pronounced to be in a fit condition for use, and the grand operation of casting was commenced. The two furnaces were tapped, and the boiling and blazing liquid gushing forth, rushing and leaping through the iron canals, which emptied into the sides of the mould, sank 12 ft. into the solid ground. The flaming streams continued to run for 15 minutes down through the iron flask or shell of the mould—the metal, in the meantime, bubbling and revolving as it rose in the inner shaft of the sand, which, in fact, formed the actual mould for the cannon. The metal having reached the level of the mould, a supplementary or cap mould was put on, and filled with some tons of metal poured into it from a crane ladle. The object of this addition is to give, by means of dead weight above, steadiness to the process of chrystalization in that portion of the mass out of which the cannon is to be turned. Ten days will elapse before the metal will have become sufficiently cool to admit of the removal of the flask, by digging away the compact ground in which it stands embedded; and then, in the space of five weeks, the gun can be finished, and got ready for mounting on Fort George in our harbour, for which it is designed. The casting was done under the personal supervision of Mr. Alger and Col. Bomford, the inventor of this species of ordnance—to the first specimen of which Thomas Jefferson, 1809, gave the name of the "Columbiad." The weight of the gun when finished will be 25,000 lbs. Length, 10 ft: diameter at the base ring, 39 in.; length of chamber, 13 in.; diameter of chamber, 9 in.; length of bore, 9 ft. 1 in; diameter of bore, 12 in. Weight of round shot which it will carry, 230 lbs.; weight of shell, 180 lbs. Range of shot or shell, 3½ miles—being one-quarter of a mile greater than the recorded performance of the largest and latest invented mortar in England, and half a mile beyond the reach of any gun in the castle of St. Juan de Ulloa, at Vera Cruz. The cost of this immense instrument for harbour defence will not exceed $1700; or one-sixth the cost of the wrought-iron gun procured in England by Capt. Stockton.—*Boston Post* (American Paper) July 9.

EFFECT OF THE INCREASED PRODUCTION OF GOLD ON THE CURRENCY.—The increased productiveness of the Russian mines continues to be a subject of great interest with certain political economists, and threatens, in their opinion, to upset completely Sir R. Peel's definition of a pound, and to overturn all his theories regarding the regulation of the currency. The *Morning Chronicle* remarks that "the enormous amount of gold which has been produced in the Russian mines begins to excite the attention of the whole commercial world. Much of the recent imports of bullion are attributed to this source. It is thought by many that these new sources of supply for the precious metals will sooner or later have the effect of reducing the value of our standard. The *Mining Journal*, in an article on the "Progress of French Mining," states, that the value of gold extracted in five years from the Russian mines amounts to 12,792,000*l.* sterling; that there has been an increase every year, which is still likely to continue. "What is to become of this gold?" is a question now asked with some anxiety in Russia—England, which has hitherto taken all, clearly not being able to purchase for the future all that Russia is capable of producing.—The Russian mountains, in which the gold has has been discovered, and is now in course of being wrought, are of very great extent, and the probable produce of the precious metals is beyond any calculation. There can be little doubt that large beds of the same ore are to be found in many other parts of the world, and the progress of geological research may yet lead to the most important discoveries in reference to the precious metals. The operations of mining in our Australian colonies promises to be highly satisfactory and profitable; and although beds of gold and silver may not yet have been discovered, the masses of other metals that have been met with afford the strongest encouragement to the prosecution of these undertakings. [Extracts are then given from the *Toronto Patriot*, as published in the *Mining Journal* of the 18th of July, respecting the progress of American Mines.] Great, however, as is the production of the Russian mines, and abundant as the supply of the precious metals still promises to become, there is as yet no effect produced upon prices. This is supposed to be the test, which must determine the question as to the nature, quantity, and value of the currency. Other nations will no doubt be able to take off some of this great supply of gold as well as England. There are many nations where its introduction in greater abundance would not only be a mighty advantage to the inhabitants, but tend to the general improvement and extension of commerce. Why should men who insist upon having cheap bread, cheap sugar, and a general free trade, feel at all alarmed at the increase of the precious metals? is not an abundance of these metals to be as much desired as an abundance of everything else? In the present age, when the power of production has been so enormously increased, when the precious metals contribute so largely to the necessities and comforts of mankind, their increase and more abundant circulation must tend to the advantage of all classes. The extent to which the production of gold and silver can be carried; and the effect a largely increased supply must ultimately exercise upon the value of our currency and prices, cannot be determined at present. This is a subject largely involved in many others, and which a long period of time will be required to resolve. It does not appear that the question, "What is a pound?" can be answered in any other way that it has already been by Sir R. Peel, for at least some time to come. The increased supply of gold is not likely to disturb that question, in the existing condition of commercial affairs. —*Railway Herald.*

SCIENTIFIC AND LITERARY INSTITUTIONS.—We are glad to notice the spreading desire for the formation of these useful institutions. A meeting, consisting of a numerous and highly-respectable body of gentlemen connected with the neighbourhood of Blackfriars-road, has been held, for the purpose of establishing the Surrey Athenæum, or Literary, Scientific, and Mechanics' Institution, at the Rotunda, Blackfriars-road—a building admirably adapted for such purpose; Benjamin Hawes, M.P., presided, and was ably assisted by Apsley Pellatt—ever prominent in the promotion of beneficial measures—J. S. Buckingham, Rev. J. W. Watkin, E. Wilson, A. W. Hoggins, and others: the resolutions passed give a satisfactory idea of the feelings which actuate the gentlemen interested in the formation of the proposed institution, and we shall feel pleasure in announcing that they have succeeded to the utmost of their wishes.

ROYAL POLYTECHNIC INSTITUTION.—The chemical lecturer to the institution, Dr. J. Ryan, has, during the week, been engaged in delivering a course of lectures on the Application of Chemistry to the various Arts and Manufactures—such as glass-making, &c. In one of these lectures the doctor illustrated a method of cutting and boring glass with common iron instruments—employing, however, a solution of camphor in turpentine, instead of the usual preparations, such as emery, sulphate of copper, &c. By keeping the instrument moistened with camphorated turpentine, the learned doctor showed that glass might be cut and bored as readily and safely as any of the metals. This is a secret well worth knowing, and we cannot avoid expressing our thanks to the lecturer who thus prominently has explained to the world a matter of such moment. This establishment suffered considerably from the thunder storm on Saturday last—the hail destroyed nearly 800 squares of glass; but we are happy to inform the public, that the whole is restored to its wonted appearance.

Orsi's Railway Blocks and Sleepers.—A patent has been secured for a peculiar form of fastening the chairs to the sleepers for railways, by which the inventor (Mr. Orsi, of Pimlico) proposes to obtain a fixity of gauge, give a solid and rigid support to the rails, and preserve the metal from the corrosive effects of the atmosphere. To effect these results, the chairs are cast with ears or lugs on the bottom surface, and an iron tension rod passing through them, across the line, they are rivetted thereto at the proper distance of gauge. The chairs and rods thus fixed, are then placed in a trough; and a liquid cement, such as asphalte or other bituminous substance, is poured over, and, when cold, forms a complete coating of the bar and ears, preserving them from the atmosphere or wet. He claims also, for imbedding blocks of wood in the cement, traced by transverse tension rods for ordinary chairs, to be fixed by bolts and nuts.

Wheal Susan.—An adjourned meeting of the adventurers was held at the Guildhall, Tavistock, on Thursday, the 6th inst., when a report on the mine was read. The meeting was not numerously attended, and, after a slight discussion, the meeting adjourned until a future day; it being left with the purser, Mr. T. Weekes, to call the adventurers together, on the lode being cut at the 25 fm. level. The appointment of a captain, in the room of Capt. Jonathan Davey, was deferred.

Manufacture of Pig-Iron in America.—We quote the following from the *New York Herald*, of the 14th July:—"It is with much surprise we have seen, in some of the party papers, the extraordinary statement, that pig-iron is made in the United States, as a general business, for $12 per ton—in face of the well-established fact, that there is scarcely a position within the country where it can be produced under $17—with the exception, perhaps, of factories on the Potomac River, where, with coal, ore, and lime, and with water-power combined, it cannot be made under $15. Such misrepresentations—proving too much—are most likely to counteract the object in contemplation; they show a selfish interest, entirely inconsistent with fairness—totally unworthy the confidence of Congress. The peculiar advantages on the Potomac River for making pig-iron, at the lowest price, ought never to be presented as conclusive evidence, that other situations are equally favourable. Pig-iron, made from charcoal, invariably costs $20 (east of the Alleghany Mountains); and, where the ore, or the fuel, is to be brought to the furnaces, the cost cannot be much less.'

Iron Ships.—A splendid iron steamer left this harbour for St. Petersburg, intended for the conveyance of passengers on the Neva. She is named the *Vesta*, and both hull and machinery were constructed by Messrs. Barr and McNab, of the Abercorn Iron-Works, Paisley. The dimensions of this vessel are, length, 175 ft.; breadth, 17½ ft.; depth, 8½ ft. She is propelled by an engine of 120-horse power, and is calculated to steam 12 to 13 knots. Her cabin accommodations are most tastefully arranged; and, throughout, the skill and judgment of her builders and engineer are conspiciously shown. It is understood that she belongs to a company in St. Petersburgh, and was built under the superintendence of an enterprising engineer, late of this town, Mr. Thomas Wardropper, who accompanies the vessel.—*Newcastle Advertiser.*

Effects of Mining Operations.—The inhabitants of Wolverhampton-street, Bilston, were thrown into a state of the utmost consternation on Sunday se'nnight, by a gradual subsidence of the earth, followed by the cracking of walls, and the falling of portions of buildings. On running out to ascertain the cause of the visitation, it was discovered that the earth was gradually sinking, owing to the effects of mining operations underneath, and to the neglect of the necessary precautions for supporting the roofs of the pits. On Wednesday, the progress of destruction recommenced, several houses having fallen in—fortunately, however, without any of the inmates being injured. Between 20 and 30 more dwellings appear doomed to a similar fate, as the walls are cracking in every direction, and there is little hope of saving the property.—*Wolverhampton Chronicle.*

Railway Traffic.—From our official returns, it appears that the amount of traffic, for the last week, on nearly 1800 miles of railway, was 175,869*l.*, thus accounted for:—107,228*l.* for the conveyance of passengers only, 34,801*l.* for the carriage of goods, and a remainder of 33,840*l.* for passengers and goods together not respectively apportioned; being an increase over the corresponding week of last year of 22,181*l.*—*Railway Chronicle*, of this day.

A heavy warning to engineers not to undertake works which they cannot fairly accomplish, has been administered by the law this week. Mr. Giles, the engineer, has been assessed in a penalty of not less than 4500*l.* for the imperfections of his plans of the Dudley, Madeley, and Ironbridge.

MINE ACCIDENTS.

Wheal Trenance Mine, Mullion—Singular Escape.—A miner, named Guy, employed with another, drawing attle from the No. 7 adit shaft, while landing the kibble, fell from the brace head foremost. After descending some fathoms, he got entangled in the rope, which guided him from the sides to the bottom of the shaft—a depth of 18 to 20 fms. Still, although his descent was so rapid, it is surprising that, with the exception of a few cuts in the head, and some severe bruises about the legs and arms, he was unhurt—not a bone being broken.

Adventure Colliery, West Rainton.—M. Hall, deputy-overman, whilst in the act of propping the roof of the "broken," was crushed by a stone falling on him.

Benton and Pemberton's Works, Deepfield, near Wolverhampton.—J. Rogers was scalded to death from neglecting to "pack" the engine.

Prestwood Colliery.—S. Clark was killed by an explosion of sulphur.

Princes' End, Tipton.—J. Newman, aged 13 years, was killed by a fall of rock

Wednesbury Oak Colliery.—An explosion of fire damp here severely injured three miners—Cadman, Walters, and another. The pit is owned by Philip Williams, Esq., and worked by Mr. Evans.

Castleton, near Rochdale.—S. Stanley and two of his sons were sadly injured by an explosion of fire damp at Messrs. Knowles and Co.'s Collieries.

Mining Accidents in Scotland.—John Johnston was killed at *Carnbroe Iron-Works* a few days ago by a fall of roof.—A miner, named Boyd, lost his life in one of the *Calder Pits.* It is said, a neighbouring workman nearly perished from the effects of the damp, in endeavouring to get at the body, and was only saved by a rope which had been fastened round him, by which he was drawn out to the fresh air; and, although in an exhausted state, he succeeded in bring the corpse of Boyd with him.—Another miner lost his life in No. 4 pit, *Gartlee*, belonging to the Monkland Company, by a piece of coal falling down the pit.—A boy, named M'Cready, lost his life in the *Gartur k Pit, Calder.*—While two colliers were in the act of descending a pit, situated in the neighbourhood of *Kenmure*, and belonging to the *Summerlee Iron Company*, the main rope to which the bucket was attached broke, when both were precipitated to the bottom, and instantly killed.—John Penman, of Holytown, lost his life in *Mossend Pit, near Kilbirnie.* It would appear, he had been employed in the shaft, when the ropes of the scaffold gave way, and he was precipitated to the bottom, a distance of 30 fms.

NEW PATENTS AND REGISTRATIONS.

Extracts from the Mechanics' Magazine Weekly List of English Patents:—

W. G. Armstrong, Newcastle-upon-Tyne, for an improved lifting, lowering, and hauling apparatus.

T. Payne, gent., Handsworth, near Bimringham, for improvements in the manufacture of rolls for rolling iron and other metals.

C. Vignoles, jun., Apperly-bridge, near Bradford, York, civil engineer, for improvements in employing steam as a motive power.

C. Hancock, gent., Grosvenor-place, Middlesex, for certain improvements in the manufacture of gutta percha, and its applications alone, and in combination with other substances.

M. Borgognon, gent., 15, New Broad street, London, for certain improvements in producing artificial basaltic lavas. (Being a communication from abroad).

C. Chinnock, gent., Seymour-place, Little Chelsea, for improvements in the construction and methods of extending and compressing articles of furniture for domestic use, also applicable to cutlery, workmens' tools, window blinds, shutters, and similar useful purposes.

P. Taylor, Hollinwood, near Manchester, machinist, for certain improvements in machinery for propelling vessels, carriages and machinery, parts of which improvements are applicable to drawing and propelling fluids, also improvements in the construction of vessels.

N. F. C. Desbolsdierres, gent., Rue St. Pierre, Montmaitre, France, for improvements in preparing and burning fuel.

G. N. Guttasson, late of Sweden, but now of Warrne-street, Fitzroy-square, Middlesex, engineer, for certain improvements in steam engines.

COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—Adair's Main 13 6—Chester Main 13 9—Davison's West Hartley 15—Grace's Hartley 13 6—North Percy Hartley 13 9—Original Tanfield 13 6—Old Pontop 13 6—Ord's Redheugh 13—Stewart's Hartley 14 6—Tanfield Moor 15—West Hartley 15—West Wylam 13 9—Wylam 14—Wall's End Northumberland 14 6—Walker 14 3—Wharncliffe 14 3—Eden Main 14 3—Braddyll's Hetton 15 6—East Hetton 14 3—Haswell 14 9—Hetton 15 6—Lambton 15—Plummer 15 3—Richmund 14 3 to 14 6—Russell's Hetton 15—Stewart's 15 3 to 15 6—Kelloe 15 3—Adelaide 15—Brown's Deanery 14 3—Seymour Tees 14 6—South Durham 14—Tees 15 3—Cowpen Hartley 15—Derwentwater Hartley 14 6—Sidney's Hartley 15.—Ships at market, 105.

WEDNESDAY.—Adair's Main 13 6—Buddle's West Hartley 15—Chester Main 13 9—Davison's West Hartley 15—Dean's Primrose 13 6—Grace's Hartley 13 6—Ord's Redheugh 13—Ravensworth's West Hartley 14 9—Stewart's Hartley 14—Tanfield Moor 15—West Hartley 15—Wylam 14—Wall's End Killingworth 14—Biddell's 14—Wharncliffe 14 3—Eden Main 14 3—Braddyll's Hetton 15 3—Hetton 15 3—Lambton 15—Richmund 14 6—Russell's Hetton 15—Stewart's 15 3—Tees 15 3—Derwentwater Hartley 14 6—Sidney's Hartley 15.—Ships at market, 76.

FRIDAY.—Chester Main 13 9—Davison's West Hartley 15—Grace's Hartley 13 6—Hasting's Hartley 15—Holywell Main 14 9—Original Tanfield 13 6—Old Pontop 12 6—Ord's Redheugh 13—Ravensworth's West Hartley 14 9—Tanfield Moor 15—West Hartley 15—Wylam 14—Eden Main 14 3—Cowpen Hartley 15—Derwentwater Hartley 14 6—Ramsay's Gateshead Coke 22 6—Sidney's Hartley 15—Wall's End Killingworth 14—Walker 14—Wharncliffe 14—Belmont 14 3—Braddyll's Hetton 15 3—East Hetton 14 3—Haswell 15 9—Hetton 15 3—Kenyley 14 6—Lambton 15—Russell's Hetton 14 9—Kelloe 15—Brown's Deanery 14 3—Seymour Tees 14 3—South Durham 14.—Ships at market, 86; sold, 59; unsold, 29.

Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning, Twelve o'clock.

Bank Stock, 7 per Cent., 209 8
3 per Cent. Reduced Ann., 96 ⅜
3 per Cent. Consols Ann., 95⅝ ⅞
3 per Cent. Annuities, 94⅛
3½ per Cent. Ann., 97⅛ 8
Long Annuities, 10⅛
India Stock, 10½ per Cent., 262 60
3 per Cent. Consols for Acc., 96
Exchequer Bills, 1000*l.*, 11 7 11 pm.

Belgian Bonds, 4½ per Cents., 97⅛
Dutch, 2½ per Cent., 59⅝
Brazilian, 5 per Cents., 90
Chilian, 6 per Cents., 100
Mexican, 5 per Cents., 24⅛ 25
Spanish, 5 per Cents., 26 5⅛
Ditto Deferred, —
Portuguese, 4 per Cents., 41⅛ 39⅛
Russian, 5 per Cents., 112½

Mines.—Although the amount of business in the mining share market has not been very extensive, yet there appears favourable *indications* of a firmer and better market. Inquiries have been made for shares in several mines at a lower figure than our quotations; but there is a stronger disposition to hold out for better prices than even to submit to quoted prices. Upon the whole, we consider the mining share market healthier, and, we trust, another week will enable us to state a complete renovation. The transactions in British mines have not been limited, as the following business done will show, and, in some mines, to rather a large extent:—Tamars, Devon and Courtneys, Wheal Concord, West Wheal Maria, East Wheal Tamar, Wheal Walter, Wheal Gill, West Caradon, Herodsfoot, South Trelawney, Treleighs, Ting Tang, West Bassett, West Tolgus, West Wheal Jewel, Levant, West Providence, Condurrow, West Seton, East Crofty, Wheal Maria (tin mine), North Pool, West Russell, Barristown; and in the foreign mines, Copiapos, Bolanos, Alten, St. John del Rey, Real del Moutes.

Railways.—The chief business during the week has been in railway scrips and shares, which have been generally on the rise. The Indian lines are in favour, and a large business has been done, as it is expected that useful amalgamations may be effected among them. The North of India, and the East India, it is said, will form one company, under the sanction of the directors of the East India Company. The introduction of railways in our eastern empire, will be one of the most beneficial improvements that have taken place, as it will give not only an impetus to the industry of the population, but afford them a cheap and quick medium of sending their produce to the different markets—a desideratum long been wanting.—With respect to the scrip and shares in our new lines, we notice an advance in the Buckinghamshire, Caledonian, Oxford, Worcester, and Wolverhampton; but in the whole there has been very little doing.—Foreign scrip shares have followed the English market, and are improving; on the whole, it has been what may be termed a busy week in the City.—The railway campaign of the committees is now drawing to a close; and the labours of the House of Commons have ended for the session, after many tedious hours of litigation, on the part of oppositionists.

The Standing Orders Committee of the House of Lords has decided, that the promoters of the London and South-Western (London-bridge extension) had complied with the Standing Orders. Their lordships, having resolved themselves into a committee on merits, decided that the preamble of the Eastern Counties, and Thames Junction Branch Railway Bill, had been proved; Hertford and Hatfield, preamble not proved; West Riding Union, Manchester, Bolton, and Bury Canal, and Manchester and Leeds amalgamation, proved.—

Meetings.—Cornwall and Devon Central took place on Saturday, for the purpose of deciding whether the scheme should be abandoned or continued—a report of which will be found in another column.—Windsor, Slough, and Staines Atmospheric, was held on Wednesday, at Windsor; when it was decided for a dissolution, by 3375 shares against 185, majority 3290 shares; consequently, the company is dissolved, finding that they could not compete with the Great Western.—Chester and Holyhead: second half-yearly meeting was held at their offices, Moorgate-street, on Wednesday. The report stated that 2,627,188 cubic yards of earthwork had been executed; and the masonry, tunnels, &c., had advanced in a corresponding ratio. The number of workmen employed was 12,388. At the Menai Straits the tubular bridge was adopted. The first two miles of the line out of Chester will be opened in October next, simultaneously with the North Wales Mineral Railway. The opening as far as Conway was contemplated for the autumn of next year, when the mails for Ireland would be conveyed by that route. The amount to be expended by Government on the port of Holyhead this year was 150,000*l.*, of which this company would provide 37,500*l.* The chief topic of discussion was the expediency of establishing steam-vessels between Holyhead and Kingstown, which the chairman said should have the consideration of the directors. The report was adopted, and the directors stated that the funds at their disposal, and the tenders received for loans, rendered it unnecessary to make any further call during the present year. The financial statement of the company showed that the total receipts, from the commencement of the 30th June last, was 944,007*l.* 14s. 1d.; expenditure, 805,729*l.* 8s. 10d.; leaving a balance, including a deposit on share capital of 300,000*l.* allotted to the company, and the Shropshire Union and Canal Company, of 148,298*l.* 5s. 3d. A resolution was adopted, empowering the directors to borrow a sum of 700,000*l.*, according to the power given by the Act.—Yorkshire and Glasgow Union was held at the London Tavern on Wednesday. The chairman said he would preside, but under a protest, as he considered the meeting illegal, as the opinion of the Attorney-General and Mr. S. Wortley was most decided on that point. A return of 1*l.* 2s. 6d. per share, on the original 25*l.* Leeds and Carlisle shares, would take place on their registration, and that a legal meeting would take place on the 25th instant, when the directors would give any explanation required The result of the scrutiny for going on with the undertaking, being an incorporated company, was an immense majority.—Glasgow, Strathaven, and Lesmahagow Direct, held at Glasgow, on Monday last; it was resolved to hold the half-yearly meetings in the months of February and August.—Caledonian Northern District, was held on Monday, at Glasgow, to consider the propriety of dissolving the company. The chairman announced that 2*l.* 2s. per share would be returned immediately, or 2*l.* 3s. to all who accepted it as a final settlement.—Eastern Counties ordinary half-yearly meeting was held on Thursday, at the London Tavern (G. Hudson, Esq., M.P., in the chair), when a dividend of 9s. per share, of 14*l.* 16s. each, in the consolidated stock, and in proportion, on the share capital of the Northern and Eastern Company, was declared. The increase of traffic during the last half-year has been 86,788*l.* 7s. over the corresponding six months of 1845, and 28,462*l.* 0s. 10d., in excess of the six months to the 4th January last, during five months of which the line to Brandon was open. The report was adopted, and power granted to convert extension stock, No. 2, into shares, and the purchase of the Thames Junction, the Woolwich, Wisbeach, and St. Ives, carried, and a vote of acclamation to Mr. Hudson.—London and Brighton eighteenth half-yearly general meeting, was held at the London-bridge station, on Thursday, being the last meeting that will take place of this company under that title, as it now forms part of the consolidated companies, called the "London, Brighton, and South Coast Railway." Mr. Buckton (the secretary) read the report. The gross revenue arising from traffic in the half-year, ending the 30th June last, shows an increase to the amount of 11,000*l.* upon the corresponding period of last year. A dividend of 2*l.* 4s. 6d. was declared.—Brighton and Chichester half-yearly meeting was held at the London-bridge terminus, on Thursday, a statement of the accounts up to the 30th June was laid upon the table, making the whole expenditure amount to the sum of 93,813*l.*—Bideford and Tavistock: a special meeting was held on Tuesday, at No. 44, Finsbury-circus, for the purpose considering the propriety of winding up the affairs of the company, and deciding whether the dissolution should be taken as an act of bankruptcy. The deposits paid up amounted to 25,575*l.*, and the expenses have swallowed up all but 8633*l.*, which remains to be divided, returning 10s. a share. A resolution, proposing that the company should dissolve, and that the dissolution should not be considered as an act of bankruptcy, was carried unanimously. The meeting was adjourned till a future day, in order to get a sufficient number of shares represented.—Yesterday a meeting was held at Euston-square, the wealth represented at which was probably never equalled in the aggregate by any convention in the annals of the country's commerce. The meeting was the conjoint one of the London and Birmingham, Liverpool and Manchester, Grand Junction, Manchester and Birmingham, and several other lines in the north which have lately obtained Parliamentary powers for amalgamating themselves in one body, under the *nomen generale* of the "London and North Western Railway." Collectively they represent an area of some hundred of miles, wielding a wand over something like 330 miles of territory, and holding the key of an exchequer whose money power represents something upwards of 17,000,000*l.* Individually, and before the amalgamation was sanctioned, their powers of domain were as follows:—The London and Birmingham comprehended in itself 112 miles between its termini, but with its adjuncts—The Leamington and Warwick—9 miles, and the Northampton and Peterborough 44 miles, a total of 164 miles. The Liverpool and Manchester, with its tributaries—the Bolton and Leigh and Kenyon and Leigh—occupied 38 miles; the Grand Junction, with its branch, called the Chester and Crewe, 100 miles; and the Manchester and Birmingham, 31 miles. In addition to these, under the terms of the amalgamative measures, are to be included the North Union, 46 miles, and Lancashire and Preston, and minor lines. Six originally independent routes have thus been merged into one protectorate—so that England, from London to the north, has become placed under the entrammelled control of the cross-bars of one private body, from its inland centre, London, to Manchester and Liverpool, the greatest triangles of its trade. The capital of the united corporation is estimated at upwards of 17,000,000*l.* Of this, 8,500,000*l.* are proper to the London and Birmingham; 5,788,360*l.* to the Grand Junction and Liverpool and Manchester; and 2,800,000*l.* to the Manchester and Birmingham; and the total amount these companies in their corporate capacities are authorised to borrow is 5,747,000*l.* There are to be eight directors of the London and Birmingham, six of the Grand Junction, and three of the Manchester and Birmingham. Besides these there is a permanent committee, consisting of directors from all the companies, of some 24 in number; the amount of qualification being 1000*l.* stock each.—The Chairman eulogised the measure of amalgamation, as calculated to confer benefit alike on the proprietors and the public, deprecated the principle upon which the Legislature had this session acted, and whose labours are looked upon by others as a grand commentary on the expediency of competition, and gave a somewhat melancholy account of those expected prizes, in the shape of preambles expected to be proved, which had, unfortunately, turned up blanks in the lottery of legislation, and given them only a particoloured portion of prosperity. He (the chairman) prepared the proprietors to expect prospectively a diminution in their dividends, owing to the creation of new stock for new works; a diminution, however, which, in all probability, may be more reasonably apprehended from the competition which must, in a short period, come into play upon all sides of the London and North Western. He likewise prepared them to expect public and Parliamentary impalement, on the score of their obtaining enormous profits by the periodical creation of new stock. Neither the country, nor the Parliamentary committees, ought so much to begrudge this, provided they find uniformly that these accumulations have been accompanied by liberal concessions to the public.

RAILWAY SHARE LIST.

RAILWAYS.	*Paid*	*Closing pr. last week.*	*Closing pr. last night*
Aberdeen	£10	8¼	10¼
Amber, Nottingham, Boston, and Erewash Junction	2½	1¼	2⅝
Armagh, Coleraine, and Portrush—25*l.* shares	1¾	—	—
Birmingham and Gloucester—100*l* shares	100	130	131
Birmingham and Oxford Junction—20*l* shares	2	7	7⅛
Bristol and Exeter—100*l* shares	70	85	88
Bristol and Gloucester—50*l* per share	30	52	53½
Caledonian—50*l* per share	5	14½	16
Cambridge and Lincoln—25*l* shares	1½	—	—
Chelmsford and Bury	1¾	—	—
Chester and Holyhead—50*l* shares	27½	27½	27⅝
Direct Northern—50*l* shares	2½	1⅝	1¾
Direct Manchester (Remington's)—20*l* shares	2⅝	⅝	⅝
Ditto Rastrick's	5½	⅝	—
Dublin and Galway—50*l* shares	4	1¾	1¾
Dundalk and Enniskillen—50*l* shares	7½	—	—
Eastern Counties—25*l* shares	14*l* 16*s*	24¼	24
East Lincolnshire	1½	¼	1
Edinburgh and Glasgow—50*l* shares	50	74	75
Exeter, Yeovil, and Dorchester—50*l* shares	2⅝	3¼	3½
Goole and Doncaster—20*l* shares	42*s*	¼ dis.	¼ dis.
Grand Union (Nottingham and Lynn)	1½	⅝	⅝
Great Grimsby and Sheffield—50*l.* shares	5	—	—
Great Southern and Western (Ireland)—50*l.* shares	15	29½	30¼
Great North of England—100*l* shares	100	235	235
Great Western—100*l* shares	80	152½	151
Guildford, Farnham, and Portsmouth—50*l.* shares	5	5⅜	5⅜
Hull and Selby—50*l* shares	50	107	106
Lancaster and Carlisle—50*l* shares	25	62½	65
Leeds and Carlisle	2½	—	1⅜
Leicester and Birmingham—20*l* shares	22*s*	1 dis.	—
Leicester and Bedford—20*l* shares	22*s*	¾ dis.	½ dis.
Leicester and Tamworth—20*l* shares	42*s*	½ dis.	½ dis.
Liverpool, Manchester, and Newcastle Junction	1¾	1¾	2¼
London and North Western	stock.	232	231
London and Birmingham Extension—25*l* shares	1¾	—	—
London and Blackwall	Av. 16*l* 13*s* 4*d*	9¼	9
London and Brighton—50*l* shares	50	66	66
London and Croydon	Av. 13*l* 15*s* 9*d*	23½	22½
London and Greenwich	Av. 12*l* 15*s* 4*d*	9½	9½
London and South Western	Av. 41*l* 6*s* 10*d*	77	76½
London and York—50*l* shares	2½	1½	2½
London, Salisbury, and Yeovil—50*l* shares	2½	1⅝	—
Londonderry and Coleraine—50*l* shares	2½	6	—
Lynn and Ely—25*l.* shares	15	16	16½
Lynn and Dereham—25*l* shares	15	11	13½
Manchester and Leeds—100*l* shares	82	115	120½
Manchester and Birmingham—40*l* shares	40	86½	88
Manchester, Buxton, and Matlock—20*l* shares	42*s*	1	1⅜ pm.
Manchester and Southampton	2	1½	1⅝
Midland	Stock	148½	146
Ditto Birmingham and Derby	Stock	122	118
Newcastle and Berwick—25*l* shares	10	29	28⅝
Newcastle and Carlisle—100*l* shares	100	—	—
Newcastle and Darlington Junction—25*l* shares	25	43½	44½
Ditto New (Brandling)—25*l* shares	20	44½	—
Newark, Sheffield, and Boston—25*l* shares	2½	¼	—
North British—25*l* shares	17½	38½	39⅝
North Devon	2	—	—
Northern and Eastern—50*l* shares	45	76	—
North Kent and Direct Dover—50*l* shares	2½	1¼	1⅝
North Staffordshire—20*l* shares	42*s*	3½ pm.	4 pm.
Oxford, Worcester, and Wolverhampton	12½	8	8⅛
Portsmouth Direct—50*l* shares	3½	5⅛	5⅛
Preston and Wyre—50*l* shares	50	36	36⅛
Richmond—20*l* shares	5	18⅝	18⅝
Rugby and Huntingdon—20*l* shares	2	—	—
Scottish Central—25*l* shares	7½	17½	18½
Scottish Midland—25*l* shares	10	6½	6⅝
Sheffield and Manchester—100*l* shares	100	—	—
Shrewsbury and Birmingham	2½	3	3⅛
South Devon—50*l* shares	25	—	32
South Eastern and Dover	Av. 33*l* 2*s* 4*d*	46	46
South Midland—20*l* shares	42*s*	¾ pm.	¾ pm.
South Wales—50*l* shares	5	2½	4⅛
Staines and Richmond—20*l* shares	1	—	1⅛
Trent Valley—20*l* shares	5	—	—
Trent Valley and Holyhead Junction—20*l* shares	2½	—	—
Vale of Neath	2	1	1⅛
Welsh Midland	2½	1	1
Wilts, Somerset, and Weymouth—50*l* shares	5	5⅛	5⅛
Yarmouth and Norwich—20*l.* shares	20	—	—
York and Carlisle	2½	⅝	1⅛
York and North Midland—50*l* shares	50	102	—
Ditto Selby—50*l* shares	30	77	73
FOREIGN RAILWAYS.			
Boulogne and Amiens—20*l* shares	10	12½	12⅝
Bordeaux and Toulouse and Cette (Mackenzie)—20*l* shares	2	—	1⅜
Bordeaux, Toulouse, and Cette (Espalete)—20*l.* shares	2	1¼	1⅜
Central of Spain—20*l* shares	2	¾	1
Dutch Rhenish—20*l* shares	5	6¼	6¼
East Indian	¼	¼	¼
Great Northern of France (constituted)	5	13	13
Great Western Bengal	¼	—	¼
Great Western Canada—22½*l.* shares	3¾	—	—
Jamaica and South Midland Junction—20*l* shares	1	—	¾
Jamaica North Midland	1	—	—
Louvaine and Jemappe—20*l* shares	4	—	—
Lyons and Avignon—20*l* shares	2	—	—
Luxembourg	4	1½	2
Namur and Liege—20*l* shares	4	3	3
Orleans and Vierzon—20*l* shares	10	14⅜	14
Orleans and Bordeaux—20*l* shares	6	8½	8½
Paris and St. Quentin—20*l* per share	2	—	—
Paris and Orleans—20*l* shares	20	48¾	—
Paris and Rouen—20*l* shares	20	38½	38
Rouen and Havre—20*l* shares	18	27⅞	27⅞
Sambre and Meuse—20*l* shares	6	3⅞	4⅛
Strasburg and Basle—14*l* shares	14	7⅛	—
West Flanders	4	3½	3⅝

* Prices obtained from country brokers—no business doing in the London market.

RAILWAY TRAFFIC RETURNS.

Name of Railway.	Lgth. Rway.	Present actual cost.	Last Div.	*Traffic Returns.* 1846	1845
Arbroath and Forfar	15	£142,900	3*p.c.*	—	£206
Chester and Birkenhead	15	589,362	2½	1040 0 0	772
Dublin and Drogheda	32	631,258	3½	847 2 10	877
Dublin and Kingstown	6	349,736	9	1456 4 5	1441
Dundee and Arbroath	17	153,598	6	419 1 0	305
Durham and Sunderland	19	302,118	2	639 13 1	788
E. Counties & North. & East.	124½	4,090,328	5	9214 5 7	5999
Eastern Union	—	—	—	443 0 0	—
Edinburgh and Glasgow	46	1,686,226	6	4139 2 5	2560
Glasgow, Paisley, and Ayr	51	1,104,773	7	2736 9 7	2196
Glasgow, Paisley, & Greenock	23	806,134	2	1324 9 1	1233
Gravesend and Rochester	7	89,828	—	346 1 7	344
Great North of England	45	1,296,196	6	—	—
Great Western	240½	8,179,980	8	21591 4 11	20523
Hartlepool	—	—	—	949 8 2	1116
London and North Western	358½	12,849,716	10	46270 4 1	23070
London and Blackwall	4	1,078,761	1½	1490 13 8	1323
London and Brighton	112	2,653,673	7	11525 9 4	7067
London and Croydon	10	842,592	5	—	2080
London and South-Western	93	2,620,734	10½	8953 18 10	10303
Manchester and Birmingham	85	2,197,885	6	—	4494
Manchester & Leeds	61	3,372,240	8	7367 1 9	7462
Manchester, Bolton, & Bury	10	849,725	5½	1222 0 9½	1000
Midland Company	259½	8,831,195	7½	19117 3 9	18442
Newcastle and Carlisle	65	1,137,385	5	2103 10 2	1927
Newcastle and Darlington	22½	1,272,031	9	3185 1 6	2846
Newcastle and North Shields	7	316,869	5	—	566
Norfolk	59	573,818	5	1612 0 11	460
North British	63	—	—	1982 15 6	—
Preston and Wyre	22	432,014	2½	1484 16 3	694
Sheffield and Manchester	41½	1,313,225	5	2983 5 11	1315
South Devon	15	520,942	—	776 0 0	—
South-Eastern and Dover	103	4,284,924	3½	11265 7 11	7892
Taff Vale	30	648,348	5	1173 13 11	1132
Ulster	25	358,353	5½	616 14 5	580
York and North Midland	84	2,334,599	10	6045 13 0	5814
Paris and Orleans	82	2,082,916	9½	—	6285
Paris and Rouen	85	1,955,208	8	6901 0 0	6698

THAMES TUNNEL COMPANY.

The number of passengers who passed through the Tunnel in the week ending August 1 was 18,494; amount of money, £77 1s. 3d.

PRICES OF MINING SHARES.

BRITISH MINES.

Shares.	Company.	Paid.	Price.
1024	Alfred Consols	3½	40
235	Andrew and Nangiles	25½	35
1000	Barristown	4½	30
4000	Bedford	2½	3½
128	Besore Lead Mine	—	30
320	Birch Tor Tin Mine	10½	12
6000	Blaenavon	50	40
256	Bodwannick	3	5
100	Botallack	175	200
120	Brewer	—	7
10000	British Iron, New, regis.	10	19
—	Ditto ditto, scrip	10	19
128	Budnick Consols	—	30
100	Bwlch Cwmerfin	20	200
1000	Callington	19	20
256	Caradon Consols	45	35
256	Caradon Copper Mine	9½	4
256	Caradon Mines	15	30
256	Caradon United	24	16-25
256	Caradon Wh. Hooper	12	6
1000	Carn Brea	15	110
114	Charlestown	—	200
236	Chypraze	—	5
1900	Combmartin	5½	4½
128	Comfort	—	40
5000	Con. Tretoll Mining Ass.	3½	2½
128	Condurrow	31	60
2560	Cook's Kitchen	—	6
1000	Copper Bottom	1	5
3200	Cornubian Lead Co.	3	—
1024	Cosheen	4½	25
240	Craddock Moor	9	25
128	Creeg Braws	120	120
500	Cubert Mine	11	30
1024	Devon & Courtney Con.	4	6
1000	Dhurode	2	5
186	Dolcoath	—	80
10000	Durham County Coal	45	9
256	East Alvenney	3	16
128	East Pool	5	35
9000	East Tamar Consols	1½	3
—	East Wheal Albert	1	3
94	East Wheal Crofty	—	320
256	East Wheal Kitty	¼	¼
128	East Wheal Rose	50	1000
123	East Wheal Seton	2½	15
512	Fowey Consols	—	40
20000	Galvanised Iron Co.	10	10
10000	Gen. Mining Co. for Irel.	½	¾
1000	Godolphin	—	35
256	Gonamena	19	110
128	Gover	23	200
244½	Grambler & St. Aubyn	—	30
400	Great Consols	1000	400
256	Great Calestick Moors	—	13
2560	Great Mitchel Consols	—	2
256	Great Resugga Moor	1	8
160	Grogwinion	5	20
1000	Gunnis Lake	1½	3
128	Hallenbeagle	—	50
1000	Hanson	5	1
1000	Harrowbarrow Old Mine	4½	4
1000	Harrowbarrow Consols	2	1½
800	Hawkmoor	3	3
6000	Heignston Down Con.	1	2
256	Herodsfoot	14	12½
10000	Hibernian	12½	1
1000	Holmbush	18	10½
256	Ivy Tor	1½	2½
827	Kirkcudbrightshire	1½	1½
2048	Lamherooe Wh. Maria	7	7½
128	Lanarth & Penstruthal	—	150
2048	Lanivet Consols	2	4½
200	Larkholes	1	3
160	Levant	—	100
1000	Lewis	12	1½
1280	Llancynfelin	5	15
128	Ludcott	3	3
2800	Marke Valley	10	3½
5000	Mendip Hills	1½	1
20000	Mining Co. of Ireland	7	12½
1000	Nant-A'r-Nelle	2	2½
200	Nanterrow Consols	10½	5
128	New East Crowndale	7½	2
128	North Fowey Consols	10	25
100	North Pool	11	50
70	North Roskear	16½	400
256	North Treburget	2½	4
100	North United	41	20
256	North Wh. Leisure	1½	6
128	North Wh. Providence	2½	10
256	North Wheal Rose	26½	20
15000	Northern Coal Co.	22	2
600	Old Delabole Slate Co.	25	45
128	Par Consols	—	900
256	Penhallow Moor	15	5
6000	Peanant	1	2
100	Penrhiw	80	65
128	Pen-y-Cefn Mine	80	55
1280	Perran St. George Un.	13	20
128	Perran Wh. Virgin	—	45
512	Plymouth Wh. Yeoland	1½	3½
10000	Rhymney Iron	50	25
256	Rose Consols	40	7
1000	Rosewall Hill	1	3½
1024	Roscarrock	2½	—
2500	Silver Valley	3	3
256	Sourton Consols	3½	5
128	South Caradon	10	380
2000	South Dolcoath	2	—
256	Sth. Friendsh. Wh. Ann	7½	25
260	South St. George	9½	5
200	South Harvannah	23	26
800	South Towan	10	1½
256	South Trelawney	8½	9
128	South Yeoland	16½	20
128	South Wheal Basset	—	160
124	South Wh. Francis	—	90

BRITISH MINES—*continued.*

Shares.	Company.	Paid	Price.
256	South Wh. Hope	—	5
1000	South Wh. Maria	2½	2
256	South Wheal Rose	11½	3
10000	Southern & Western, Irish	1	2
256	St. Anstell Consols	7	20
94	St. Ives Consols	—	600
1000	Stray Park	43	22
9600	Tamar Consols	½	5
6000	Tincroft	7	10½
256	Ting Tang	67	12
128	Tokenbury	124	33
1024	Trelawney Consols	1½	1½
5000	Treleigh Consols	6	4½
256	Trenow Consols	—	150
96	Tresavean	10	250
120	Trethellan	5	45
120	Treviskey and Barrier	61	130
256	Trewallack	—	27½
128	Trewellard	12	25½
4000	United Hills	5	4
100	United Mines	300	800
128	West Basset	10	15
256	West Caradon	20	305
128	West Cargoll	2	15
512	West Fowey Consols	40	35
—	West Kekewich Consols	—	3½
256	Wheal Kekewich	4	8
256	West Providence	—	15
200	West Seton	—	50
120	West Trethellan	5	32
256	West United Hills	2½	3½
256	West Wh. Friendship	5	10
3845	West Wheal Jewel	11	2½
2560	West Wh. Maria	½	2½
2560	West Wh. Mitchell	—	2
256	West Wheal Shepherd	—	10
256	West Wheal Tolgus	21½	15
256	West Wheal Treasury	12	8
240	Westerlake	3	3
6000	Wicklow Copper	5	16½
256	Wheal Albert	10	8
128	Wheal Acland	13	10
256	Wheal Allen	½	4
368	Wheal Anderton	10½	11½
128	Wheal Ann	—	50
256	Wheal Blencowe	—	15
256	Wheal Boscastle	3½	18
256	Wheal Bian Consols	½	3
128	Wheal Catherine	5½	½
256	Wheal Cleveland	2½	4
136	Wheal Clifford	—	200
1024	Wheal Concord	5½	10
256	Wheal Fortescue	4½	12½
256	Wheal Frederick	3	20
384	Wheal Franco	22	25
256	Wheal Gill	17½	31
1000	Wheal Harriet	1	—
128	Wheal Henry	—	5
109	Wheal Hope (Zennor)	23	25
256	Wheal Hope	7	1½
256	Wheal Jane	6	40
265	Wheal Kendall	11½	5
1024	Wheal Maria	1	600
4000	Wheal Martha Consols	4	3
256	Wheal Mary Ann	5	98
1024	Wheal Mary (Calstock)	2½	1½
256	Wheal Mary Consols	25	8½
256	Wheal Mexico	5	5
256	Wheal Mary Lanivet	2½	12
256	Wheal Norris	9	9½
128	Wheal Penrose	—	5
128	Wheal Pollard	11½	12
128	Wheal Prospect	4	9
128	Wheal Providence	34	40
128	Wheal Reeth	1	60
256	Wheal Robins	13	2
128	Wheal Rose	40	25
256	Wheal Salusbury	13	5
512	Wheal Sarah	2½	5
99	Wheal Seton	150	900
1024	Wheal Spearne	1½	8
256	Wheal Sisters	25½	23
128	Wheal St. Cleer	21½	15
260	Wheal Trelawney	7½	115
256	Wheal Trevenna	3½	4
256	Wheal Trewennan	—	10
128	Wheal Venland	12½	12
256	Wheal Victoria	2	6
127	Wheal Virgin	—	50*
1024	Wheal Walter	3	8
256	Wheal Williams	2	20

FOREIGN MINES.

Shares.	Company.	Paid	Price.
5000	Alten Mining Company	14½	2
15000	Asturian Mining Co.	6	3
10000	Anglo-Mexican Co.	100	3
8374	Ditto Subscription	25	4
2000	Bolanos	150	4½
12000	Ditto Scrip	15	5
10000	Brazilian Imperial	20	4
12000	Cobre Copper Co.	40	23
8500	Colombian Co. regis.	55	} 4½
5000	Ditto Scrip	—	}
10000	Copiapo Mining Co.	14	2
20000	General Mining Ass'n.	20	18
5051	Mexican Company	59	5
12000	Mocaubas & Cocaes	25	8½
29820	{ Rl. del Monte, regis. / Ditto unregistered }	28½	av. 8½
	Ditto Red Debentures	—	19
	Ditto Black ditto	—	17
	Ditto Loan Notes	150	117
7000	Royal Santiago	10	11
2000	Pachuca Mines	3	3½
11000	St. John del Rey	15	10½
43174	United Mexican	28½	3½

LATEST CURRENT PRICES OF METALS.

LONDON, AUGUST 7, 1845.

	£ s.	£ s. d.
Iron—Bar *a*..Wales..*ton*	8 5—	8 10 0
„ ..London	9 5—	9 10 0
Nail rods „	0 0—	10 5 0
Hoop(Staf.) „	11 5—	11 10 0
Sheet „ „	0 0—	13 0 0
Bars „ „	0 0—	11 0 0
Rails, average	9 10—	12 0 0
Welsh cold-blast foundry pig	0 0—	5 5 0
Scotch pig *b*, Clyde	3 12 6	3 15 0
Russian, CCND *c*	0 0—	16 0 0
„ PSI	0 0—	16 0 0
„ Gourieff	14 5—	14 10 0
„ Archangel	13 10—	13 12 6
Swedish *d*, on the spot	11 0—	11 10 0
„ Steel, fagt.	0 0—	15 5 0
„ „ kegs *e*	14 0—	14 5 0
Copper—Tile *f*	0 0—	92 0 0
Tough cake	0 0—	93 0 0
Best selected	0 0—	96 0 0

	£ s.	£ s. d.
Copper—Ordin. sheets, *lb.*	0 0—	0 0 10½
„ bottoms	0 0—	0 0 11½
Tin—Com. blocks *g*..*cwt.*	0 0—	4 12 0
„ bars	0 0—	4 13 6
Refined	0 0—	4 15 0
Straits *h*	4 11—	4 12 0
Banca	0 0—	4 14 0
Tin Plates—Ch., IC *i*, *box*	1 9—	1 10 0
„ IX	1 15—	1 16 0
Coke, IC	0 0—	1 5 0
„ IX	0 0—	1 11 0
Lead—Sheet *k* ..*ton*	0 0—	19 10 0
Pig, refined	0 0—	21 0 0
„ common	0 0—	18 10 0
„ Spanish, in bd.	18 0—	18 5 0
„ American	0 0—	17 10 0
Spelter—(Cake) *l*	0 0—	19 0 0
Zinc—(Sheet) *m* export.*	28 0—	30 0 0
Quicksilver *n* ..*lb.*	0 0—	0 4 6
Refined Metal ..*ton*	4 15—	5 0 0

a Discount 2½ per cent. *b* Net cash. *e* Discount 2½ per cent. *d* Ditto.

[*From our Correspondent.*]

Iron.—Prices of all descriptions remain firm, but there is not much business reported this week.

Tin.—English continues scarce, with a good demand—foreign not in request, but prices are firm.—Tin Plates are a shade better, especially coke quality—the stock of which is unusually low.

Spelter is 10s. per ton higher than it was last week, owing to operations at Hamburgh, but in this market there is very little doing, and the highest paid here is understood to be 18*l.* 12s. 6d. for a small parcel on the 1st inst., when the stock on hand was 2600 tons.—Other metals remain as quoted in last week's *Mining Journal.*

[*Communicated by Messrs. Whitcomb and Barton, Old Broad-street.*]

The iron market has been rather quiet this week—prices, however, remain firm. In Scotch pig-iron sales have been made at 72s. 6d., cash, and 75s., bill. In spelter sales are reported during the week at from 18*l.* 12s. 6d. to 19*l.*

MONTHLY REPORT.—In Spelter, since last month, several transactions have taken place at prices varying from 18*l.* 7s. 6d. to 18*l.* 15s., and holders are now asking 19*l.*, having refused the previous rate. The stock here, on the 1st inst., was 2600 tons—the principal portion of which is held by consumers, and which will not come into market.

Quicksilver continues firm, at 4s. 6d. per lb.

English Iron, of every description, may be quoted firmer since last mail. In bars, large sales have been made, as high as 8*l.* net cash, delivered in Wales, several large houses in the trade being the principal buyers, and for rails some extensive sales have been made at 9*l.* 10s. Scotch pig iron has advanced to 72*l.* 6s. for mixed Nos., and 75s. per ton for No. 1, delivered at Glasgow. Swedish bar is firm, at 11*l.* to 11*l.* 10s.; and steel continues dull at quotations.

English Copper has undergone no alteration in price since last month. The smelters continue firm, and will not submit to lower prices.

English Tin remains firm, at the late advanced prices, with a cosiderable business doing. Banca and Straits in fair demand at quotations.

Tin Plates are at present dull of sale.

English Pig Lead is rather lower since last month, Sellers at 18*l.* 10s. to 18*l.* 15s. In Spanish nothing doing.

Birmingham, July 7.—The iron-trade of South Staffordshire is now in a more flourishing condition than it has been for some time. Orders have been pouring in from all quarters for railway iron. A contract has just been made by several of our large ironmasters for 8000 tons of iron, for the great Menai Strait Bridge, for the passage of railway trains. Of these 8000 tons, 2000 have been taken by Mr. Walter Williams; 1500, Messrs. Bramah, Barrows, and Hall; 1000, Messrs. Thorneycroft and Co.; 1500, Messrs. James Foster and Co.; 1000, Coalbrook Dale Company; and 1000, Butterley Company.

GLASGOW PIG-IRON TRADE.

August 1.—Several large contracts have been made this week at full prices, and the market has closed very firm at our quotations—say, 70s. to 71s. for No. 3; 72s. 6d. for mixed Nos., and 75s. for all No. 1—cash, free on board; and there is not much iron offering for sale now at these prices—holders looking for a farther rise.—*Scottish Guardian.*

August 4.—The market has been dull the last two days, and we have almost no transactions to notice; prices, however, keep steady at last quotations.

Leeds, Friday.—Prices, since our last, have fluctuated exceedingly—the rise on Monday having been in some cases 3*l.* or 4*l.* per share; this advance, as might have been expected, from its rapidity and suddenness, has not been maintained. Prices, however, are still good, with a fair amount of business doing; and, provided proper caution be shown by speculators, we see nothing in the way of a *gradual* improvement in the value of good stock. The West Riding Union proved its preamble in the House of Lords yesterday, and the shares have advanced to 3½ premium. Huddersfield and Manchesters are firm at 2½ premium. Dewsburys, after reaching 11 premium on Monday, are now quiet at 6½ premium. Huddersfield and Sheffield, and Leeds and Bradfords, are both in moderate demand. TOOTAL, BARFF, & FLINT.

Hull, Thursday.—Since we last wrote the market has been strong and buoyant, and every description of good stock easy to sell. On Monday last our meetings resembled those of August and September last, rather than any more recent ones; but yesterday and to-day, although much business was done, with a good demand for stock, there was not the same degree of excitement, which we consider is all for the best. The report from the Chester and Holyhead Company states, that between 12,000 and 13,000 men are now employed on that line alone. Some conception may be formed from this fact, of the good railways are doing to the country generally.

Drowning a Mine.—In the Nisi Prius Court, Chester, on Wednesday, Lord Denman was engaged a short time in trying a case—the British Iron Company *v.* Kendrick—which had been previously tried at the Chester Assizes. The plaintiffs brought an action against the defendant for having taken a quantity of coals out of a mine, by which means the water out of the defendant's mine flowed into that of the plaintiffs, and thus put a stop to the plaintiffs' works. His lordship suggested that some competent person should be appointed to inspect the mine, and that all matters in dispute should be referred to some gentleman of the bar. After some discussion as to the terms of the reference, his lordship's suggestion was agreed to.

Important Case as to Liability of Adventurers.—At the Bodmin Assizes, on Wednesday, a cause (Ricketts and others *v.* Bennett and another), which came on for trial, excited a considerable interest in the county, from the question raised, as to the liability of adventurers for advances made to the purser by bankers. In the present instance a sum of 3600*l.*, or thereabouts, had been drawn by Mr. Robinson, the purser, on the plaintiffs, who are bankers at Truro, and which money had been applied by the purser in the payment of *dividends*, there being *no proceeds* from the mine, and in other ways; the defendants being *out*-adventurers. Several points of law were raised, involving the question of the *cost-book system*, to which we shall advert next week. Verdict for the defendants.

COPPER ORES.

Sampled July 22, and Sold at Tyack's Hotel, Camborne, August 6, 1846.

Mines.	Tons.	Price.
Wh. Seton	113	6 19 0
ditto	112	7 18 6
ditto	108	6 13 0
ditto	102	6 9 6
ditto	83	3 5 6
ditto	74	6 11 0
ditto	62	7 12 0
Camborne Vean	85	6 16 6
ditto	79	4 0 6
ditto	78	5 14 0
ditto	67	5 8 6
ditto	60	2 5 6
ditto	57	5 8 6
ditto	55	4 11 6
ditto	46	6 0 6
Stray Park	26	4 1 6
East Wh. Crofty	85	7 15 6
ditto	82	4 19 0
ditto	80	6 4 0
ditto	79	5 2 6
ditto	66	4 15 6
ditto	41	2 8 0
Dudnance	46	6 12 0
Longclose	43	6 5 0
Tincroft	78	5 9 0
ditto	76	6 3 0
ditto	67	4 4 0
ditto	62	3 8 5
ditto	60	3 4 6
ditto	58	1 14 6

Mines.	Tons.	Price.
Tincroft	57	£3 5 0
ditto	39	4 8 0
ditto	23	2 11 6
Dolcoath	103	6 16 6
ditto	102	4 3 6
ditto	88	4 16 6
ditto	47	1 10 0
ditto	38	0 5 6
ditto	35	0 5 6
South Wh. Bassett	86	3 17 6
ditto	61	3 4 0
ditto	60	3 15 6
ditto	55	4 3 6
ditto	47	7 9 0
ditto	26	7 10 0
Fowey Consols	112	4 16 6
ditto	108	4 9 0
ditto	74	3 12 0
Condurrow	105	4 1 0
ditto	45	3 14 6
Godolphin	60	4 4 6
ditto	42	2 11 0
ditto	14	11 7 6
ditto	1	30 5 0
Wh. Vyvyan	40	0 15 0
ditto	38	6 19 6
East Pool	77	5 7 0
Tretoil	43	4 8 0
Hanson Mines	35	5 1 0
Lewis Mines	10	5 16 0

TOTAL PRODUCE.

Mines.	Tons.	Amount.
Wh. Seton	654	£4279 6 6
Camborne Vean / Stray Park	553	2786 12 6
East Wh. Crofty / Dudnance / Longclose	522	2953 11 0
Tincroft	520	2095 17 6
Dolcoath	413	1644 0 0
South W. Basset	335	1529 14 6
Fowey Consols	294	1287 8 0
Condurrow	150	592 17 6
Godolphin	117	550 2 0
Wh. Vyvyan	78	295 1 0
East Pool	77	411 19 0
Tretoil	43	189 4 0
Hanson Mines	35	176 15 0
Lewis Mines	10	58 0 0

Average standard, 104*l.* 11s.—Average produce, 7⅞.—Average price per ton, 4*l.* 19s. 0d.—Quantity of ore, 3801 tons.—Quantity of fine copper, 280 tons 5 cwts.—Amount of money 18,850*l.* 8s. 6d.—Average standard of last sale, 100*l.* 10s. 0d.—Average produce ditto, 7⅞.

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
Mines Royal	267	£1817 6 6
English Copper	545½	2661 3 8
Vivian and Sons	502	1996 16 6
Freeman and Co.	553⅔	2526 16 2
Grenfell and Sons	590½	3309 8 2
Sims, Willyams, and Co.	498½	2517 5 0
Williams, Foster, and Co.	844	4021 12 6
Total tons	3801	£18,850 10 6

Copper ores for sale on Thursday next, at Andrew's Hotel, Redruth.—Mines and Parcels.—Carn Brea Mines 743—United Hills 369—Wheal Prosper 262—Par Consols 250—Wheal Virgin 208—Wheal Providence 166—Trenow Consols 129—West Wheal Jewel 124—Wheal Brewer 83—Hayle Slag 54—Wheal Rodney 41—Wheal Kayle 40—North Wheal Basset 24—Redruth Consols 20—West Wheal Maria 12—Wh. Weeth 4.—Total, 2529 tons.

Copper ores for sale on Thursday week, at Andrew's Hotel, Redruth.—Mines and Parcels.—Devonshire Great Consols, Wheal Maria, and Wheal Fanny 1805—West Caradon 366—Fowey Consols 308—Wheal Friendship 224—Marke Valley 111—Holmbush 106—Bedford United Mines 92—Wheal Gorland 26.—Total, 3038 tons.

COPPER ORES

Sampled July 15, and Sold at Swansea, August 5, 1846.

Mines.	Tons.	Prod.	Stand.	Price.
Cobre	100	12¾	84¾	£8 11 0
ditto	95	12½	85½	8 4 0
ditto	91	12½	85	8 7 6
ditto	86	12¾	83½	8 10 0
ditto	28	12½	85¾	8 5 0
ditto	99	13⅞	84	9 8 0
ditto	97	14	84	9 10 0
ditto	94	14	83½	9 8 6
ditto	93	14⅞	82¾	9 12 6
Cuba	105	12½	86	8 10 0
ditto	102	12½	85¾	8 9 0
ditto	100	12⅞	85½	8 10 6
ditto	86	12½	85½	8 4 0
ditto	90	11¼	87½	7 15 6
ditto	86	12½	85¾	8 5 0
ditto	73	11⅞	86¾	8 1 0
Chili	65	33½	77½	23 14 0
ditto	64	34	76½	23 14 0
ditto	63	33½	79½	24 2 0
ditto	50	50	73¾	34 11 0

Mines.	Tons.	Prod.	Stand.	Price.
Chili	48	47	75	£33 1 0
ditto	35	50½	76	36 3 6
Burra Burra	61	19¾	83½	14 5 0
ditto	58	19⅝	84	14 5 0
ditto	56	19½	84	14 3 0
ditto	13	21½	82½	15 9 6
Ballymurtagh	65	6½	105	4 3 6
ditto	44	5½	106½	3 17 6
ditto	37	3⅞	123	2 4 0
Berehaven	102	9⅞	94	6 18 0
Pennsylvania	41	9⅞	87	6 4 6
ditto	22	19	82¾	13 9 0
ditto	42	8¼	92½	5 5 0
Yeo Slag	53	2⅞	128	0 16 0
Ardtully	52	6½	104½	4 2 6
Montacute	34	18¼	85½	13 6 0
ditto	3	20½	83	14 15 0
Bayamo		withdrawn.		
North Molton	5	3⅞	118⅞	2 1 0

TOTAL PRODUCE.

Mines.	Tons.	Amount.
Cobre	783	£6991 6 0
Cuba	642	5309 0 0
Chili	325	9155 12 6
Burra Burra	188	2689 6 6
Ballymurtagh	146	523 5 6
Berehaven	102	703 16 0
Pennsylvania	105	£771 12 6
Yeo Slag	53	42 8 0
Ardtully	52	214 10 0
Montacute	37	496 9 0
Bayamo		withdrawn.
North Molton	5	10 5 0

Total tons, 2438.—Total amount, £26,907 11s. 0d.

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
English Copper Company	268	£5359 3 0
Freeman and Co.	125	1965 17 6
Grenfell and Sons	590	4756 3 0
Sims, Willyams, Nevill, Druce, and Co.	288	3016 4 6
Vivian and Sons	362	4367 15 0
Williams, Foster, and Co.	719	6732 18 0
Mines Royal	86	709 10 0
Totals	tons 2438	£26,907 11 0

Copper Ores for Sale, August 19.—Santiago 120, ditto 118, ditto 105, ditto 89, ditto 99, ditto 87, ditto 84, ditto 83, ditto 54—Cobre 105, ditto 102, ditto 81, ditto 76, ditto 63, ditto 70, ditto 42—Copiapo 106, ditto 101, ditto 99, ditto 97—Berehaven 126, ditto 123, ditto 110—Knockmahon 104, ditto 97—Chili 49, ditto 47, ditto 36—Australia 61, ditto 57—Kaw-aw 51, ditto 5—Ballygahan 56—Burra Burra 28—Spanish 1.—total 2732 tons.

NOTICES TO CORRESPONDENTS.

We have several letters, &c., on hand, among which are—"One of the Old School," on the Tutwork and Tribute Question—"A Miner"—"R. S. T."—"W. R."—"P.," on Railway Improvements, &c.

"A Constant Reader" is thanked for his communication on the General Mining Association.

The Cost-Book System.—Some further remarks on this subject must stand over.

Mine Surveying.—Mr. Budge is wrong in attributing the authorship of the letter, signep "A Tutwork Man," to the gentleman named—his letter in reply is, therefore, withheld.—Why let personal feelings so much interfere with the fair discussion of an important subject?

THE MINING JOURNAL
And Atmospheric Railway Gazette.

LONDON, AUGUST 8, 1846.

We have frequently noticed the progress of mining operations in France, and the discoveries made within the last 18 months in the different provinces of Algeria (at least, so reported to have been), and so praised up by the Paris Journals, as to lead many to believe that new colony to be one of the most prolific in iron, copper, lead, salt, and other minerals, of any kingdom in the world; and that, if worked with spirited enterprise, would be able to supply France, in a few years hence, with a sufficient quantity of metal, to save her having recourse to foreign importations. We have already given our opinions, *au contraire*, on these bombastic mineral discoveries in one of the most sterile as well as unhealthy quarters of the globe, and the impracticability of working the ores (should they actually exist), in consequence of the scarcity of water, but more particularly fuel of every description, either wood, charcoal, or coal, as the colony is nearly barren of all these requisites for mining operations, and must be imported at a great expense, either from France (?), Belgium, Spain, or England. Another important drawback is the situation of the mines in arid, deserted mountains, at a great distance from any seaport, for shipment to France, without roads or any means of conveyance, and the miners would be constantly exposed to the attacks of their inveterate foes, the Arabs, from whom they would neither have quarter or mercy. And now, that our readers may be well informed on the actual mineral wealth of France, we give the following enumeration of the discoveries which have been made during the last year, in the different departments, compiled from official returns made to Government by the Engineers of Mines—from which it will be seen, that the existence of iron ore, which has been discovered, is, but in a very few instances, of a quality sufficiently good, even to render it a fair speculation to work—not, indeed, averaging more than 10 to 12 per cent., when converted into metal. However desirous the French may be to work their own resources, so as to prevent, if possible, the importation of foreign metal, they must now feel convinced that British, Belgic, Swedish, and other foreign iron of every description, is so far superior and less expensive than what they ever can produce, they never will be able to compete with British and other irons in the market, however obnoxious it may be to their anti-English feelings against the mining enterprise and great resources of this commercial and flourishing country. The following are the most noted mineral departments in France:—

Ain.—The explorations undertaken in the south, of the concession of Vaux, have ascertained a continuation of a bed of oxide, hidrated, oolithic iron, now worked by the grantees. This is a very important discovery, as the working of new beds of iron ore in this locality will considerably increase the resources of the mines of Vaux, and those of St. Sorlin, Souclin, Soudon, and Villebois, in the vicinity, offering to the high furnaces of the departments of the Loire and Rhone great resources, and is rapidly progressing.

Alps (Lower).—A discovery has been near Burles of a bed of oligist iron ore; but, in consequence of the want of fuel, no great advantage can be taken in working it.

Ardeche.—In the environs of Privas, several beds of iron ore have been discovered; but, as they have not been conceded by Government, although there are numerous demands for grants, they are not yet worked.

Ariege.—In the mountain of Rabert, new researches are being made for iron ore, which had been for some time interrupted; results not yet known.

Aube.—From researches made in the commune of Thieffrain, several important beds of iron ore have been found.

Aude.—In the commune of Fabrezan, canton of Lesignaux, a bed of oxidated, hidrated iron ore; and, by being mixed with equal portions of iron ore Riance (Ariége), proved by a Catalan forge, produced a very malleable iron; a concession has been applied for.

Correze.—Researches have been executed in a bed of oligist iron in the commune of Vigeois; but a large quantity of pyrites existing in the ore, and the hardness of the rock, it is not expected to be profitable.

Corsica.—A bed of oxidated iron, situated in the communes of Farinole and Olmetta, in the district of Bastia, is about to be worked.

Cote d'Or.—Several valuable beds of *fusiform* ore.

Gard.—In the commune of Cameyras, a bed of oxidated, hydrated iron, presenting large lumps.

Gironde.—The researches made in this department have not been successful.

Jura.—The working of the beds of ore in the commune of Oungey, has been followed up by subterraneous explorations, which have clearly announced that the metalliferous vein to which these beds appertain, is about 12 ft. in thickness, of an excellent quality.

Loire.—They have continued in the commune of Chanbon, district of St. Etienne, the researches undertaken on a powerful and extensive bed of freestone coal, which is more or less charged with oxidated red iron; but, up to the present, it has not been found rich enough to be worked as an iron ore; the fine specimens only having yielded, when tried, 14 per cent. of cast metal.

Moselle.—In consequence of researches made under the direction of the mining engineers of the department, in the wood of Botte, in the commune of Villerupt, to ascertain the existence of iron ore, they have discovered severable valuable new beds, varying in nature; some running through the calcareous earth only 6 ft. from the surface, and known by the name of *mines de gazon* (turf ore), consisting of small grains of iron ore, and ferruginous argil; and the other, rock ore, consisting of lumps of oxide, hydrated iron, which is obliged to be broken previous to passing the high furnace. The one quality occupies a superficies of 220 acres—so that the beds of this ore, admitting its average thickness to be 3 ft. only, would yield 11,000,000 metrical cwts. of ore proper for smelting, as it weighs about 3000 lbs. per cubic metre. The rock ore has been ascertained would yield at the minimum 14 metrical cwts. suitable for melting—making at least 25,000,000 cwts. of ore for treating in the high furnaces; a very important discovery.

Pyrenees (Upper).—Several rich beds of oligist iron, running in veins through the granite and schistose rocks, in the valley of Barousse, promise well.

Rhine (Upper).—The researches for iron ore in the commune of Roppe have proved very successful, and the company; which had been exploring it, has applied for a concession from Government to work them.

In the department of the Rhone, several researches have been made, to discover, if possible, the existence of iron ore at the extremity of the valley of Gier, where there are five high furnaces in blast, which are obliged to procure

their supplies of ore from a very great distance. The works have been carried on to a great extent, through a freestone coal mine, impregnated with oxide of iron, which, however, does not yield more than 12 per cent., and not considered worth working.

In the departments of the Saone and Loire, Var, Vaucluse, and Vosges, various beds of oxidated iron have been found, some of very excellent quality, if properly treated in the high furnaces.

We made, in our Journal of the 25th ult., a few remarks respecting the contemplated Royal ordonnance, allowing the free importation of British and foreign sheet-iron for *shipbuilding*, as the Minister of Marine is now well convinced, that the iron forgemasters of France cannot supply not only a sufficient quantity, but quality, of sheet metal, to enable the Government to carry out their grand marine project of building iron steam-vessels, so as to compete with England o'er the ocean, if possible. We have caused the ire of our talented and friendly contemporary the *Moniteur Industriel*, at the observations; and he accuses us of partiality. We are far from being partial or national; but knowing, as we do, the mineral resources of France, and the difficulties the forgemasters are labouring under, we still maintain, that it will be some years hence before they can produce a sufficient supply—either wrought, sheet, or cast-iron—to meet the demand, not only for railways, but shipbuilding, without the Government allows the importation of foreign iron.

The *Moniteur Industriel*, with its usual acrimony towards the progress making in this country, not only in mining enterprise, but machinery, still accuses the Government with *sympathie pour l'Angleterre*. Our respectable contemporary knows well, that there is no *sympathie* in France for the commercial and mining prosperity of this country, which is extending itself all over the globe. We only wish that the ideas of the *Moniteur Industriel* may be realised, as to the mineral resources of France and those of Algeria; but they are "*des chateaux en Espagne*;" and, however rich they may be in ore, they must still continue to import coals and iron from Great Britain, Belgium, and other countries. *Malgre eux.*

[*From a Correspondent.*]

The MINING JOURNAL of the 25th July contains some remarks on the Cost-Book System. There can no question, with any practical man, as to the right of an adventurer to resign shares. The delivery to the purser of the usual form of resignation, accompanied by the amount of calls in arrear, if any, is all that is necessary on the part of the resigning adventurer to make his resignation valid; but there is some difference of opinion as to whether the value of the materials, appertaining to the resigned share, be payable 12 or 24 months after resignation. In the case of resignation, as well as sale of shares, the retiring party is, no doubt, liable to merchants for supplies during the time he held shares, but this risk is found practically to be scarcely worth notice. The two-monthly audit of accounts, and a balance-sheet, showing, in additon to the cost-book balance, all sums owing to and from the company, is the best check, if properly prepared, and also properly attended to by the adventurers, against the latter being involved in any unexpected liability. The above remarks are in confirmation of the views stated in the articles in the Journal; but my motive, in penning this communication, is to point out an error, as I deem it to be, in the statement respecting the effect of a transfer of a share not being handed to and entered by the purser. It must be borne in mind, that a sale is not complete until the purser has accepted the transfer—for, first, it is the purser's duty to refuse to transfer, if the intended seller is in arrear for calls; and, secondly, if the intended buyer is not a person of responsibility, well able to pay costs, the transfer ought to be declined,—and though the purser should be careful (not without good cause) to throw any obstacle in the way of immediate transfers, yet occasions will arise, and have done so in my own experience, when such refusal becomes necessary. In a cause, tried not very long since, the Vice-Warden of the Stanneries took occasion to state, that adventurers were not obliged to accept any party as coadventurer, whom they did not approve of. It will follow from the above, that the mere executing printed forms of transfer and notice does not constitute a legal transfer, nor by such executing is "little short of a fraud practised on the general body of adventurers in the mine, who remain unconscious of any change of hands." No change of hands can take place until the purser has accepted the transfer; and if a purchaser wishes to feel satisfied that he has a title to what he pays for, and a seller that his liability ceases, both should sign the printed forms of transfer and notice to purser, and forward them to the purser, who should retain the notice, and return the transfer, endorsed on the margin "registered," or "accepted," such endorsement being signed by him as purser. Sending the notice only, and the purser's acknowledging its acceptance, would be equally valid, though, perhaps, not to all parties so satisfactory as endorsing on the printed document.

GENERAL MINING ASSOCIATION.—The proprietors have, somewhat unexpectedly, received from the directors a circular, announcing the payment of a dividend of 30s. per share. Fresh calls, when dividends were hoped for, have been so much the practice for years past, that this change has given, so far as the payment of interest goes, considerable satisfaction. The General Mining Association commenced its labours some 20 years ago, and its operations were in the first instance, as its title denoted, of a comprehensive nature, and not confined, as at present, to the raising of coal only. Its later movements are understood to have been more successful than was the case during its early efforts, when the most valuable class of minerals was the object sought for in room of the more useful. The result of this altered policy has been such as to have enabled the directors to pay off a good portion, if not the whole, of its debts, and to establish railways, as well as to effect divers other improvements. The shares stood, about a month ago, at the price of 14*l.*; they are now quoted at 16*l.* to 18*l.*, dividend included. The capital embarked is about 400,000*l.*, and the shares are of 20*l.* each, the whole having been subscribed for and paid up. It is gratifying to us now and then to have to report a fortunate turn in the proceedings of any of the foreign mines; for hardly any of them can be named in which the proprietors have not been seriously involved.

Our attention has been called to a promising company now before the public—we allude to the Banwen Iron Company, which is advertised in another column. The property is situated in the best portion of the great mineral basin of South Wales; and there can be no doubt, from the number of veins, both of anthracite coal and iron mine, and, from their attested richness and extent (specimens of which, we observe, may be seen at the offices of the company), together with the very low cost at which they will be extracted from the earth, by patching and level workings, without pits or machinery of any description, for a number of years to come, this undertaking cannot fail, we think, to make a remunerative return to the proprietary—particularly, as we understand the directors themselves have a very considerable interest in the undertaking, which will, doubtless, secure the greatest possible economy in carrying out their objects.

IRON.—During the year 1845, there were imported of foreign iron (comprising iron ore, chromate of iron, iron in pigs, iron in bars unwrought, iron hammered into rods, cast-iron hoops, steel unwrought, and steel scraps) 39,612 tons; of iron and steel wrought there have been exported 109 tons 1 cwt. 3 qrs. 2 lbs., valued at 24,197*l.* Our principal customers, in respect to this manufacture, have been the British territories in the East Indies, whither 1520 tons of unwrought steel, and 748 tons of unwrought iron in bars, have been exported; and the British North American Colonies, which have taken 684 tons of unwrought iron bars. The principal article in foreign iron retained for home consumption has been iron in bars unwrought, the net duty upon which realised 14357*l.* 1s. 3d. Of British iron (including unwrought steel) there have been exported—of pig-iron, bar-iron, bolt and rod-iron, cast-iron, and iron wire, 265,369 tons; of the various kinds of wrought iron, 77,342 tons; of old iron of re-manufacture, 2250 tons; of unwrought steel, 7015 tons. Our best customers in this manufacture have been the United States, which have taken 61,494 tons; Germany, 56,406 tons; and France, 26,021 tons. The total of British hardware and cutlery exported, is 20,754 tons, value 2,182,999*l.* Russia has taken from us to the amount of 116,084*l.*; Germany, 113,847*l.*; France, 103,078*l.*; and our possessions in the East Indies, 91,868*l.*

ON THE METALLURGICAL TREATMENT OF ORES.—No. VIII.

MERCURY is one of the most remarkable metals, on account of its liquidity at ordinary temperatures—a property which renders it especially adapted for the construction of apparatus employed in the study of chemistry and the physics. This body could not be replaced for the above purposes by any other known liquid. This, however, consumes but a very small portion of the metal—a greater quantity is used in silvering the backs of mirrors, and in gilding and silvering many articles of jewellery, &c.; but by far the greatest quantity is employed in the extraction of gold and silver from their ores. Mercury is always extracted from its native sulphuret, which is generally known under the name of cinnabar. The mines of Almaden in Spain, and Idria in Carniola, are the most important. There are also mines of mercury in Hungary and Transylvania; but they are of little importance. This metal has also been worked for a very considerable time in China and Japan; and, lastly, it exists in Peru at Huancavelica. Cinnabar is met with generally in the coal formations, or the red sandstone. The celebrated mine at Almaden is in this deposit. Sometimes cinnabar is found in the inferior porphyries: it is also met with in the bituminous schists below the limestone, as at Idria; but rarely in the limestone itself. Cinnabar is generally accompanied by native mercury, amalgam of silver, and chloride of mercury (horn mercury). In Hungary, there is a remarkable deposit of native mercury. It has also been stated, that such a deposit exists somewhere in Sicily; but it is rather doubtful—its actual presence has, at least, never been verified. The metallurgical treatment of mercury has for its basis the volatility of the metal itself; it is always extracted, therefore, by the aid of true distillatory apparatus. In order to reduce the mercury, iron or lime must be employed—the iron forms a sulphuret of iron, and the lime a sulphuret of calcium and sulphate of lime, whilst, in both cases, mercury is set free. It can also be accomplished by a simple roasting, in which case sulphurous acid is generated, and metallic mercury produced. All these processes are employed, and it is readily evident that the last is preferable, on account of its cheapness, where nothing prevents its application.

Extraction of Mercury by Lime.—At the mines in the Palatinate, lime is the agent employed in the decomposition of cinnabar, so that iron distillatory vessels may be employed. They are very like the apparatus employed in the extraction of gas from coal—in fact, such an apparatus is best adapted for the purpose. In some places retorts are employed; they are set in a gallery furnace to the number of from 30 to 50. The ore is divided into two classes—viz. rich and poor. Each retort is capable of containing a mixture of 40 lbs. of rich ore with 15 or 18 lbs. of lime. The charge varies for the poor ore, for the above quantity of ore is mixed with a much smaller quantity of lime; in either case the retort is about two-thirds filled. To each retort is adapted an earthen receiver, partially filled with water—the junction between the retort and receiver is made good with earth. A moderate fire is at first employed; but after a short time the heat is gradually increased to redness: the operation lasts about 10 hours. When the operation is finished, the receivers are unluted, and carried to a vat, known as the "black vat" (*cuve au noir*). Above this vat is a trough, into which the receivers are emptied. The mercury remains in the trough, and the water carries away a black powder, which is composed of finely-divided mercury and pulverulent sulphuret of mercury—this deposit is termed "mercurial black." This black deposit is collected, mixed with lime, and submitted to a fresh distillation. The mercury, freed from the greater part of this black deposit, still retains a little, which forms a pellicle on its surface—this is removed by sprinkling on it lime in powder. The mercurial black thus collected, after being dried by the lime, is submitted to a distillation about every eight days. The mercury, after having been washed with clear water, is wiped, dried, and stored in the warehouses. The distillation being finished, the retorts are emptied and recharged. About 30 operations can be conducted in each furnace weekly. In order to render the ore profitable in working, it must contain at least $\frac{8}{1000}$th of mercury.

At the mines of Landsberg the furnace contains 44 retorts, each of which is 3 ft. long and 40 in. diameter in the belly. They contain 1 ton of ore and 2 cwts. of lime—the distillation lasts six hours; the charge and the recharge occupy two hours. Three distillations are made each day, and about 15 cwts. of coal are consumed—these three distillations furnish about $\frac{1}{2}$ cwt. of mercury; so that, in order to obtain 2 cwts. of mercury, 12 tons of ore and 3 tons of fuel are required. In the furnace at Landsberg, as above, the retorts are 1 foot apart. It is curious to compare these with the retorts at Pitzberg, for in the furnaces there they touch. Those furnaces contain but 30 retorts, and from 13 to 14 cwts. of ore are mixed with 1 cwt. of lime—three distillations are made in one day, and 10 cwts. of charcoal consumed, producing $\frac{1}{2}$ cwt. of mercury. The ore in this case is more productive.

Extraction of Mercury by Roasting.—This process is remarkable for its simplicity, the rapidity of execution, and the large quantity of ore it allows to be operated upon at once. This process was first employed at Almaden, where it is yet in use in the state it was first contrived. It has been adopted at Idria, where advantageous modifications have been made.

Treatment of Mercury at Almaden.—The apparatus at Almaden is composed of a furnace, containing a dozen rows of earthen vessels, known under the name of "aludels," and two condensing chambers. The furnace has a hearth at the level of the sole, on which is burnt faggots, or brushwood, and is furnished with a chimney of a peculiar construction, capable of receiving a large portion of the soot. Above the hearth are three arches, which serve as a support for the ore whilst roasting. The ore is placed on these arches by means of a lateral opening, which, when not is use for the above purpose, is bricked up. The charge of ore is finished by an upper opening, which is also closed during the distillation. One of the sides of the furnace abuts on a terrace, having a double inclination, the two planes of which form at their junction a kind of gutter, into which the mercury is received. On this terrace are placed the rows of aludels, terminating on one side in the openings pierced in the furnace, and on the other in the two condensing chambers. A portion of mercury is deposited in the aludels, and the last portions which come over liquify in the condensing chambers; a portion is always lost, on account of the condensers not having sufficient surface. The condensing chambers, terminating the aludels, are furnished with a door, by which they may be entered from time to time to collect the mercury. During the distillation the doors are carefully luted. Jussieu remarked, that the vapours which escape from the condensing chambers are harmful neither to vegetable or animal life. They, nevertheless, contain sulphuric and sulphurous acids, with a little mercurial vapour. Paysse assures us, that the vapours from the furnaces at Idria are all harmless; but the opinion of the neighbouring inhabitants differs totally from his. These questions are very difficult to decide, and all that is known for a certainty is, that the vapours given off are not *very* deleterious. The cinnabar is roasted in the above apparatus, the sulphur is converted into sulphurous acid, and metallic mercury volatilizes. Proust considered the Almaden apparatus a retort—that is, a retort open below, and the bottom of which is replaced by atmospheric air. This definition is not exact, for, supposing it were, the ore would not undergo the roasting it requires. The true action of the Almaden apparatus depends on the distribution of the flame, part of which passes off by the chimney of the hearth, and part darts through the ore, and aludels finally reaching the condensing chambers. There is thus induced in the space occupied by the charge a powerful draught in the direction of the aludels, which carries off the vapour of the mercury as fast as it is formed. This conceived, the details of the process are easily understood. The furnace at Almaden is a cylinder 24 feet high and 4 feet in diameter, and is 9 feet from the sole of the roasting hearth to the top; the charge is from 12½ to 15 tons of ore, which is divided into three varieties, occupying particular places in the furnace. The base of the charge is formed of large fragments, impregnated with cinnabar; but in which the latter is found too disseminated and in too small a quantity to be separated by picking. These portions are termed *soleras*, because they are always placed on the sole of the furnace. Above the soleras the rich ore is placed—this ore is termed at Almaden *cinnabrio mètal.* 25 cwts. are added to the ordinary state of the furnace—25 cwts. of rich ore are as much as can be worked with advantage. If the amount be increased to 35 cwts., the draught of the aludels is not sufficient to carry off all the mercury separated. The section of the aludels must, therefore, be proportioned to the amount of metal in the charge. The charge is completed by the addition of bricks made of small ore, the soot of the aludels, and a little clay, to give them the necessary consistence. At the upper part of one of the sides of the furnace are a dozen arches, which are connected with the aludels. Each row is 65 to 66 feet long, and is composed of 44 aludels, so that 528 are required for each furnace. These aludels are tubes of baked earth, bellying in the middle, and fitting into each other at the end; their joints are luted with ashes, mixed with water. The immense number of joints, the necessity of separating the aludels each operation, to collect the mercury, and the frequent breakages of the apparatus, are the great inconveniences of this process. The furnace is heated with brushwood, which furnishes much flame—the operation lasts 15 hours, and the soleras are completely deprived of mercury when the operation has been well conducted. The apparatus is allowed to cool for three days, at the end of which time the aludels are unluted, and the mercury collected. The gutter in the centre of the terrace is useful in collecting the mercury, which may escape from fractures in the luting, or other causes. The mercury, as it is first collected, is contaminated with soot, from which it is necessary to be completely separated—this is accomplished by pouring the mercury on the slightly inclined floor of a room, appropriated for this purpose. The soot adheres to the floor, and the purified mercury runs into a trench. The fuliginous powder adhering to the floor is collected and submitted to a new distillation. Each charge furnishes from about 25 to 30 cwts. of mercury; sometimes as much as 60 cwts. have been obtained: in general, however, it does not exceed the above computation. The near return, therefore, of the ore at Almaden is 10 per cent. At Almaden, the mercury is stored in sheepskins, which are suspended in earthen vessels.

[*To be continued in next week's Mining Journal.*]

PROGRESS OF FRENCH MINING INDUSTRY.

[FROM OUR PARIS CORRESPONDENT.]

The Report of the Government Mining Engineers, after the statements already laid before you, proceeds to set forth, that the average price of ores delivered at the furnaces, and prepared for fusion, was in 1844, for each quintal, 1 fr. 279ths, rent figuring for 128ths, working 420ths, washing 136ths, grillage 23ds, conveyance 572ds. Deducting rent and conveyance, which do not fall strictly within the cost of working, the price of ores would be reduced to 579 parts of a franc. "This," adds the report, "is very much less than what would be calculated on the same bases for the greater part of the forge districts of Europe, and especially of Great Britain; and it proves, that the soil of France is rich in ores of easy extraction." The production of *fonte* in 1844 was 4,271,753 metrical quintals—2,500,202 quintals were worked by furnaces using charcoal, 305,659 quintals from wood alone (or wood mixed with charcoal), 340,066 from charcoal and coke mixed, 1,125,126 from coke alone (or from coke mixed with coal): of the total, 3,272,591 metrical quintals form what is called *fonte d' affinage*, and 999,152 *fonte de moulage*. The production of *fer forgé* amounted to 3,150,152 metrical quintals—of which, 1,743,353 were by English *affinage*, 841,272 Comtois, 254,220 Champenois, 102,578 Comtois modified, 94,490 Catalan and Corsican treatment, 67,632 by treatment *des riblons*, 41,329 Wallen *affinage*, 5243 Nivernais. The total is also divided into 1,084,912 fabricated by means of vegitable combustibles, 2,065,213 by means of mineral. The establishments which manufacture the raw bars of forged and cast-iron into the forms usually employed in commerce, created in 1844 a value of 33,801,250 fr.—thus divided: *fabrication des petits fers* 3,469,618, of *fers fendus* 967,657 fr., of *fil de fer* 3,023,328, *de la tôle* and *fer blanc* 5,691,357, *moulage de la fonte* (1st fusion) 6,126,665, ditto (2d fusion) 14,522,625 fr. The report goes on to say, that the first matters (*fontes* and *fers*), consumed by the establishments, which produce the *fers forgé*, or which elaborate the said matters under different forms, do not, any more than the iron delivered directly for the home consumption, come exclusively from French houses. In spite of the strict tariff, there enters every year in France a considerable quantity of *fontes* and *fers*, which is employed concurrently with similar articles of French production; and besides, the French iron establishments employ every year large quantities of old *fontes* and *fers*, called *riblons*, which are collected in commerce, and are really what is called "old iron" in London. The quantity of new and old *fontes*, operated upon in 1844, was 5,272,483 metrical quintals—of which 4,271,753 were supplied by French furnaces, and the rest was imported—viz., 313,131 metrical quintals from Belgium, 194,493 from Great Britain, 13,160 from the Zollverein, 5406 from Sardinia, 4122 from Tuscany, 845 from different countries. The 527,483 quintals were thus employed:—For the production of (what is called) *gros fer*, 3,772,394 metrical quintals; for *de l' acier de forge*, 42,376; for *moulage*, 1st fusion, 556,362; for ditto, 2d fusion, 888,270; for the *vieilles fontes passées, and hauts fourneax*, 2371; *fontes* exported to foreign countries, 9848; to French colonies, 512 The quantities of *fers neufs* and *riblons* were, it appears, 3,475,176 metrical quintals—of which, 3,150,125 were supplied by French furnaces, 58,438 were imported from Sweden, 10,713 from Great Britain, 7193 from Russia, 2876 from different countries, old iron and *riblons* collected in France 240,726, do. imported 5705. The employ of the 3,475,176 metrical quintals is thus accounted for:—Old iron and *riblons*, elaborated in the fabrication of *gros fer* in special forges, 77,756; ditto elaborated with *fonte*, in forges producing iron and steel, 161,568; ditto, exported to foreign countries, 1402; *fers neufs*, subjected to a subsequent elaboration—*martinets* and *laminoirs*, 378,183; *fonderies*, 244,059; *tireries* and *trefileries*, 215,000; *toleries*, 350,630; in the *aceries de cementation*, 59,125; *fers neufs* employed in immediate consumption—viz.: rails, native, 368,948; foreign, 7193; other uses, 1,603,208; exported to foreign countries, 6893; French colonies, 1211. This completes all that is said about the iron-works of this country. Adding to what was stated in previous letters, it gives us full and complete account of the iron trade, as it is possible to have. The report next refers to steel; and I shall quote the principal facts relative thereto in my next.

The latest letters from St. Dizier state, that there was no change in the price of *fers battus à la houille*—that several works had been entirely suspended, whilst others employed only one-half of their fires. Some sold, delivered at St. Dizier for Paris, at 370 fr.; others at 380 fr., 10 fr. additional for the provinces. The *laminés* were 370 fr., delivered at St. Dizier; 380 fr. at Paris. Some important treaties had been made at higher prices; and it was thought that the interruption of the navigation on several points might cause a rise, if the assortments should fail. In *fontes blanche* nothing was done. The furnaces, which have water enough to continue, fulfil old orders. The nominal rate was 190 fr. The arrivals of wood kept up well during the preceding week. The supplies from Joinville were about finished; those from other directions were not likely to exceed a fortnight. A lot of 50,000 metres was taken at 210 fr. good wood of Lorraine. Other parcels of a similar quality were offered at higher prices, but not accepted. Conveyance by water, 27 fr. for *fonte*, 25 fr. for *fer*.

At the great fair of Beaucaire iron advanced to 37 fr. the 100 kilogrammes, being an advance of 10 fr. on the prices of the fair of the year 1845.

An extraordinary general meeting of the shareholders of the iron-works of Bonneau and Corbançon is called for the 17th August, to deliberate on the dissolution of the company, and the measures to be taken in consequence thereof.

The mania for increasing the capital of iron-work companies does not appear to have declined. Every day advertisements appear in newspapers, and are placarded on walls, to that effect. From the demand for coal and iron, the proprietors of iron-works and coal-pits deem the present a favourable time to sell, and accordingly the offers of sale are very numerous.

It appears that a fellow, who got up a mushroom railway company, and bolted with the deposits, had the impudence to purchase a number of coal mines in Belgium, at the price of several millions, without a farthing in the world to pay for them.

In my last I omitted to state, that the dispute between Mr. Mackenzie and certain ironmasters, relative to the terms on which the rails for the Orleans and Bordeaux railway should be supplied, was satisfactorily arranged before the tribunal to which it was referred had time to give its decision.

Some miners are still on the strike in the coal-pits adjoining those of Anzin, but the turn out is not very serious, nor has there been any violation of public order.—*Paris, August 3.*

Original Correspondence.

STATISTICS OF THE COAL FORMATIONS.

SIR,—I have seen, in your last week's Number, some remarks touching an inquiry, about to be instituted, into the statistics of the coal formations of Great Britain. There is but too much reason to apprehend, not indeed an immediate exhaustion of the present plentiful supply of coal, but the total consumption of the more accessible portions of the respective veins belonging to each coal-field, and that at no very distant period of time. The ratio of the increase of demand and consumption daily augments itself; and I think I speak within limits when I conjecture that, in 10 years, the amount of coal consumed in one year will be quadruple of the present quantity used in that space of time. One of the most fertile sources of the waste and destruction of coal arises from the present crude and unscientific method of reducing the various ores of iron, and converting them into pig-iron. I will assume, that only two tons of coal are at present required for the production of one ton of pig-iron, on an average, throughout the whole of the manufacturing districts of England, Wales, and Scotland; and this, either in the state of coal or coke, is used to effect the deoxidation and subsequent fusion of the metallised iron, without reference to the coal used for engines, stoves, and other collateral matters.

If, then, the whole annual produce of pig-iron amounts to 2,000,000 tons, then it follows that 4,000,000 tons of coal are yearly consumed in the simple process of reducing the ores of iron to the state of cast-iron; but is this all required to effect this purpose? By no means; for one ton of coal will, if properly applied, deoxidate, and subsequently carbonate, a quantity of materials sufficient to produce three tons of pig-iron; affording, at the same time, the heat requisite to cause the prepared materials to enter into proper fusion; and all the coal consumed, which is more than sufficient to effect these processes, is lost and wasted—so that $\frac{5}{8}$ths of the coal at present used in blast furnaces is as completely thrown away, as that consumed in the waste heaps of the Newcastle collieries. I do not assert, that the whole of this destruction can ever be obviated; but I confidently maintain that, in every situation, and under any circumstances which occur, in respect of the materials consumed, two tons of pig-iron may always be produced from a blast furnace, for every ton of coal consumed in that furnace; and 2,000,000 of tons of excellent coal, now and for years past recklessly wasted, might be preserved—or, at least, be made available for some useful purpose in each succeeding year. I feel that, in making this assertion, I shall incur the ridicule of every iron maker who may chance to cast his eye over these lines; but time will show, that I have advanced nothing beyond what I can prove. Meanwhile, I should feel much indebted to any of your readers who would kindly favour me with the greatest amount of burden carried by any blast furnace, hot-blast, or cold; and, likewise, with the greatest yield of iron from any one furnace, in comparison with the quantity of coke or coal consumed in that furnace.

Coleford, August 6. R. MUSHET.

SUPPLY OF BLAST FURNACES.

SIR,—Mr. Deakin will excuse my pointing out to him the precise locality of the iron-ore formation, to which I have alluded in a general way. As I am in treaty with certain parties on this subject, Mr. D. will readily perceive that I am not at liberty to give him this information. I neither assigned the carboniferous series, or the underlying great red sandstone, as the strata including this formation. I have simply stated, that it exists; and whenever I can derive an adequate advantage from laying it open for the benefit of the iron trade, I shall do so, and convince Mr. Deakin, that I have made no rash and unguarded statement, which I am unable to substantiate. With respect to the 10,000 pits in Staffordshire, I can only account for their having failed to find the formation I allude to, because they are not sunk where this ironstone developes itself. I am not so sanguine respecting the erection of monuments to my honour, as Mr. Deakin appears to be, unless the gratitude of the Welsh and Staffordshire ironmasters shall exceed that of their Scotch brethren; and the only monuments I should look for, would be a host of blast furnaces erected in *honour* of my discovery, just as 130 blast furnaces have in Scotland been erected to *honour* my father's discovery of the black-band. The Scotch are a cool calculating people, as the following anecdote will show, and not easily to be led away by any sudden impulse of gratitude:—

Long before brimstone was known in the Land of Cakes, there prevailed a national peculiarity—a certain irritability of skin—to which, from the peculiar motions of the hand to which it gave rise, closely resembling the action of a violin player, the homely title of the "Scotch fiddle" had been given. So intolerable was the excitement, and so widely diffused throughout the Land of Cakes, that in every village, town, and city, public scratching posts were erected, and kept in repair by the proceeds of a rate or tax, called the Itch Tax, and commissioners were appointed to see that the posts should be carefully maintained, and to prevent disorder and tumults from taking place, whenever too many candidates for each public *post* might at once present themselves. At length some happy wight, whose name has not been recorded, discovered that grand national elixir, and sovereign cure, called brimstone, and immediately laid claim to a great national reward for his discovery. A general council of the rulers of the Land of Cakes was convened, to take into consideration this claim for a public reward. At first the lords in committee were inclined, from the general impulse of gratitude they all felt, at being enabled, from a recent application of the elixir, to retain, for the first time in their lives, their seats with that degree of dignity and composure, becoming so august a body of men, to reward the discoverer of the said elixir with the proceeds for his life of the Itch Tax, heretofore expended upon the scratching posts. After some discussion, a grave senator, whose deeply excoriated knuckles bore witness to the intensity of his recent sufferings, arose and remarked, "that *honour* was the best and dearest reward which could be bestowed upon a son of the Land of Cakes; and that, therefore, he proposed, that their benefactor should have, as a reward, his name inscribed upon every scratching post throughout the land, and that the proceeds of the Itch Tax should be reserved, to enable the nation to lay in a stock of that precious elixir—a portion of which, he did not doubt, each individual would lay by in *honour* of its great inventor." This proposal was received with acclamation, and the inventor rewarded accordingly. Thus, though I might feel it a great honour to have a couple of hundred furnaces erected, to show the importance of my discoveries, I should prefer that this honour should be attended with a *leetle* profit to myself beforehand, ere the thin bubble of gratitude shall have burst, and disappeared in the full deep tide of selfishness, which ever flows on unchanged and unbroken. ROBERT MUSHET.

Coleford, August 3.

LEAD MINES OF CORNWALL—SALES OF ORES.

SIR,—I always see a full statement in your Journal of the copper ores sold at different places in Cornwall, with the quantities from each mine, the price obtained, and the parties who buy it, which, to those interested in mining, is of considerable importance. In addition to copper mines, there are also a number of lead mines about the same districts; I have often examined your Journal, to ascertain the quantity of lead sold, and the price obtained for it, but have never yet been able to find it. I think the quantity of lead produced in Cornwall and Devon must be considerable, and it is sold somewhere; therefore, I consider it ought to be shown in your Journal the same as copper ore. To myself, an account of the quantity of lead ore sold, and the mines it comes from, would be of considerable benefit; and, I have no doubt, such an account would also be equally beneficial to many other mining proprietors, and would greatly increase the usefulness of your Journal to the public. I therefore, sir, beg leave to suggest that you should make an effort (if you have not the means now) to obtain a correct account of lead ores sold in Cornwall, the same as you do with copper ore, and publish in your Journal in the same manner.—M. P. R.: *Kent-road, August* 6.

[We are quite aware of the value of the information alluded to by our correspondent, and of its importance to parties interested. The lead trade is conducted on so different a principle to that of copper or tin, that we have hitherto been unable to procure anything like satisfactory returns—in fact, been indebted to correspondents for the transmission of such occasional information as may have come under their notice. We do hope that the growing importance of the trade, and the continual proofs of the benefits derived by publicity, will induce the adoption of a more enlightened method of business; and that we may, ere long, have transmitted for publication (which we shall most gladly do) the regular Ticketing Papers, and other information. In the meantime, we can only urge on "M. P. R.," and other correspondents, the desirability of lending their aid, by furnishing such matters as they may be enabled.]

MINING PROPERTY PROTECTION SOCIETY.

SIR,—Referring to the *sixth resolution* of this society, as the descendant of a miner, I protest against the maxim of "*rogues all!*" for it is well known that, as a body "*out of their trade,*" the working miners of Cornwall have with very, very few exceptions been tolerably *honest* men—that is to say, nearly "*as honest as they could afford to be.*" But, perhaps, on this point the less said the better, as the rogues may already be well known to the Welsh dealers in ore, and other monopolists. A *Diogenes*, at noon day, might even now go about with his lantern, and hold it up in many *rich* men's faces in search of "*an honest man,*" among many who are not working miners, nor adventurers, ore dealers, &c.! There can be no doubt that, with respect to all parties, and especially so far as the public are concerned in the working of mines, "honesty is the best policy." A case of dishonesty has just been related to me by a person who demurs to my doctrine, "that working miners are not all rogues." A mine was once "knocked," in consequence, not of the removal of pegs or marks as to fathoms, but from its having been reported that a lode had *not* been cut at the junction, where, agreeably with the angle and underlie, it should have been, and where, as usual, it was expected to be very rich; the fact was, the lode *had been cut*, and being rich was slimed up, in the hopes of a new tribute being agreed on, which, however, never took place, and the works were suspended. After the sale of the materials, the individual who accomplished this dishonest act, proposed to a master tailor the joint taking of the sett by themselves; the tailor replied—"No! after that I would not join ye in robbing bird's nests, for I should be sure to come off second best." As to "free setts," &c., the halvans are an unrealised portion of national wealth, as shown in *Smith's Wealth of Nations*, and as such, instead of restricting the poor man from returning these upon his own account, every encouragement should be given to his perseverance and his endeavours, by such *honest* employment, to support himself and family. Do away with the small tin streamers, and you lose a large portion of the mineral resources of the county, which the large adventurers do not touch, and drive many an *honest* man, willing to work, into the Union prisons.

Penzance, July 27. A. T. J. MARTIN.

TUTWORK AND TRIBUTE.

SIR,—I should have been as good as my promise in expressing my views on *tutwork and tribute*, but have not done so, by reason of the effervescence Mr. Budge's acidulated sop has occasioned; and awaiting its subsidence, I still hope to add something in *sincerity*, and to the purpose, unless I am forestalled by other friends to the cause. For the present, I would beg you to call your correspondents to order as to personal abuse, and to give them a hint on the needlessly repeating the one of the other's matter. In reading the production of the "One of the Old School" (for which, on account of brevity, and adopting his own style, I say *Dad*), I was induced to give my own asecond reading, to see if his conclusions therefrom were in any way warrantable; and in so doing, I discovered therein that you had put by mistake the word *repressions* for *expressions*. Moreover, to a certainty, I discovered that those of your readers who read Dad's letter only, must have been very much deceived as to mine; inasmuch as I therein cast no reflection on any party—but the contrary, palliation was its general tone. His allusions to me are, to say the best, harmless; but let me tell him, I have a plan of conducting a discussion from which I never willingly depart, and from which he cannot drag me—it is not to run out into endless ramifications irrelevant, else I might satisfy him whether I were opposed, or otherwise, to Mr. Budge—"whether I had any business," &c. One thing I will say, that, if Dad will declare his name when he doubts the literal truth of anything I advance, and I have proof of one grain of native dignity attached to that name I will defend, be he assured, the dignity only of my opponent will *rouse* me to reply. There is a diversity of sayings in many languages—such as, "*Evil be the evil thinker,*" "*Measuring other's bushels by one's own peck,*" &c.: coming to the same point, urging Dad to self-examination; he is, doubtless, the same sort of person he suspects me to be.

Now, to the point: if we take away from Dad's letter all its raillery against Mr. Budge, and its false allusions to my own letter, there is nothing left to the purpose but what is secured in my letter preceding; and the same may be said of them all, excepting the remarks from "Observer." Dad writes tolerably; but this is no apology for a bad temper, or want of consistency. Some men have a knack of talking well upon matters of which they know but little—they are as wonderful as Babbage's mathematical engine for the extraction of *impossible roots*. But Dad's self is seen through his excellence of style; he tells us he is seeking a quarrel by the confession that, with such and such, "none can quarrel;" he associates *John Budge*, whom he dislikes, with "*Matthew Matics, whom he does not know,*" and for no other reason ridicules the both together—possibly injuring the man in the esteem of those more ignorant than Dad, as well inducing in those of your readers, who are not in a position to judge, a contempt for the sciences. This, sir, is what I deprecate; and I wish you to bind your writers to their subjects, and not to persons. There is something so immoderately gross in taunting a man with his bodily or mental infirmity. "*He that saith unto his brother, thou fool, shall be in danger of the judgment.*" I believe Mr. Budge boasts in not concealing his name; however noble this, it is impolitic—especially the putting of his name to an effusion discreditable to the party attacked—a numerous party, and from whom it seems he derives his support. I think he deserves good from the public, and that he may be a disappointed man; he has done good—I participate therein; and if Dad does not, he is not the better for that. Dad and others, under shield, fall into Mr. Budge's own error—do they not join in railing at a man to his prejudice? They should consider that, if he be wrong in his judgment, he must suffer from his own act of exposure. Let them skulk in their concealment, and a thong be pulled upon the unerring arrow to their consciences. If Mr. B. unwarily lets loose upon the public, and raises a swarm of wasps about his own ears, this seems to me no reason why Dad or I should add the "slander of a city" to a man's misfortune. Let Dad henceforth look to his neighbour's excellence; and if he finds a weak side, be it his duty to screen it. I am persuaded I shall lose by adopting Dad's mode of warfare; but, once for all, let me tell him, he has much to be forgiven—look at his sarcastic abuse, palpable, thick his ink, so that his pen might stick upright in it; in controversy let him bear in mind, that rant is a sorry aid to truth. To conclude: since he does not know whose man I am, or what my colour, I beg of him to bear with my bluffness of style, comparable only to the headiness and elbowings of the *mole;* and not be diverted by the varying evanescence of the *chamelion*, if he thinks the latter character more appropriate; and I promise you, sir, not to digress again from our subject of "Tutwork and Tribute," until some good be "sifted" out. A MOLE.

Pool, Illogan, July 28.

TUTWORK AND TRIBUTE.

SIR,—For some weeks past I have seen letters in your Journal on "Tutwork and Tribute," signed "John Budge," of Callington; now, as I happen to know something of that worthy and his "acquirements," I shall take leave, sir, with your permission, to state a few "interesting" facts for the edification of the public, in respect of the said John. But, first, I would premise that, from the preposterous theory he has recently promulgated, respecting "Tutwork and Tribute," I cannot but consider that a lack of "owners' account" jobs, and a little learning, have caused his reason to "topple o'er its throne." Moreover, he appears especially to vent his venom against the agents of mines, and that in a very acrimonious spirit. Now, I am perfectly aware of my own knowledge, that the mine agents in various districts have for many years been the very best friends John ever had, and particularly so in the immediate district whence I write. There, I know, the agents have very frequently shared their frugal meal with him, *without trenching upon owners' account allowance;* I can farther affirm, that a better "trencher" man than John never placed feet beneath the count-house mahogany; and in discussing the merits of "port, sherry, and count-house punch," I always found in him an able coadjutor. John's present conduct forcibly reminds me of the "Fox and the Grapes." Learning is not wisdom; and if he would only endeavour to acquire such wisdom, as would urge him to honourable and *useful* exertion, I doubt not but that many a generous and helping hand would still be held out to him. It is really surprising to many, that with all his capabilities, as he at times very pompously announces, John cannot get a job on "owners' account;" but the mystery is very easily solved by those who know him best—for he has taken the initiative of owners' account work so aptly, and is so capable of giving a *practical* illustration of it in his person, that those parties who would willingly give a fair day's wages for a fair day's work, in whatever capacity, find themselves wofully disappointed when they come to sum up the amount of John's exertions. The fact is, that you will seldom find much poverty, where there is a proper degree of industry, even with the most clever men. Friend John has of late been amusing his neighbours, by intimating that he is a prophet; if such be the case, I should like to know whether the strange views he is endeavouring to disseminate have been recently revealed to him. If he be a *true* prophet, he certainly is bound to account for some of the glaring blunders he has made in past times in levelling, &c., and, more particularly, in respect to South Caradon Mine. I think it high time for him to go over there, and prophecy concerning the 10 ft. error, which (I am informed) he made in levelling, and which cost the adventurers more than 150*l.* to recover; he will then, doubtless, admit it was done under a very "dark" dispensation. I would further remind him of the 4 fms. he missed in dialling in the same mine. Truly, these are astounding facts—and facts they are—to be paraded against the learned mathematician; and, although he now stands, like Baal's prophet, crying—"All ye mining adventurers hear us"—I fear his own fire will soon consume his own sacrifice. The prophet has prophesied falsely, and the people will not hear him, for great is the change in the times. Adverting once more to "owners' account," I well recollect carrying the chain to John on "owner's account," and it was "*easy* times," indeed—owners' account and he appeared on very good terms; but the good sense of the agents gave him his death-blow, and friend John is now using all his "great" abilities to resuscitate him. I fancy the following will be very much like the result:—

John, like snow, before the sun,
His course will quickly run;
And Callington will soon be free,
From John and all his misery.

Callington, July 30.

PROPOSED ALTERATION IN MINING MANAGEMENT.

SIR,—Some of the writers who are attacking Mr. Budge for giving an opinion on the management of mines, appear to be very anxious, by a variety of means, to drive him *hors de combat*. Now, sir, I will venture to say, that it would be for the general benefit of the public, if a farther inquiry and more information was entered into on this subject. There appears at present to be a variety of systems or modes of management of mines; some most admirable, which might be quoted as models and guides, with regard to superintendence, economy, and scientific knowledge, in carrying on operations. Others there are, as proved by the reports of meetings in your columns, that are in every respect the reverse of this. Many meetings take place which are not reported, that might figure on this last class. If there is a disinclination on the part of the public to invest capital in mining in Cornwall, there must be reasons for it. Mr. Budge is the author of the *Practical Miner's Guide*, which shows not only his talent for such a task, but his devotion in the cause of the practical miner, and his desire to benefit this portion of the community by his scientific experience. His object in the present controversy can be no other than to ameliorate the condition of the working miner, and to benefit all who are connected with the pursuit; yet there are champions who oppose him, and say, we will remain as we are. The farmer is studying to become scientific; the private soldier is to have a superior training in his art; and the engineer undergoes an examination—but a mine captain so dubbed (many of whom are not practised in half the scientific acquirements of a corporal of the Ordnance corps), must be allowed to possess an intuitive knowledge of dialling, &c., which is not to be questioned. Why should not persons in England, intrusted with the underground operations of working a mine, undergo an examination, touching their qualifications for such a responsibility, as they do in other countries?—it bespeaks something besides ignorance, to be afraid to be put to such a test. There is now so much competition arising from the working of mines abroad, that, unless efforts are made to put down jobbing in merchant's mines, to practise economy in every department, and to conduct the operations of dialling by competent persons with the most improved mathematical instruments, and to test work by scientific rules, and a frequency of observation to detect errors—unless efforts to this effect are made, Cornwall will not much longer hold her position as a mining county. The discussion of such a subject will arouse the adventurers to look after their interests, to inquire into the qualifications of those entrusted with the management of mines, to see who perform, and who do not perform their duty. It will check plunder; perhaps more extensive than that which a society has recently been formed at Penzance to prevent, and save tens of thousands of pounds now thrown away through negligence, ignorance, or obstinacy. The honest and industrious have nothing to fear from the inquiry, but there are others who very probably have.—FAIR PLAY: *Penzance, August* 3.

TUTWORK AND TRIBUTE.

SIR,—So, then, it seems that my antagonists are already driven to the last refuge of defeat—which is *to cry for quarter*. It is evident they have not a single hole to creep out at,—for, in your last paper, not one point could be urged in favour of continuing the ruinous "Tutwork and Tribute" prank; but one writer, calling himself "Londinensis," with manifest apprehension that the London directors and shareholders will soon use their power to interfere, and demand an experiment to be made by working their mines with efficient officers, a perfect system, and with fair and fixed wages to the miners, endeavours, by misstatement and flattery, to divert them from their purpose; but let me tell this writer, that the flaming sword of truth has already pierced too deep into this "mass of corruption" to admit of an antidote. You will observe, Mr. Editor, (and, I think, with proper indignation), how all these clandestine advocates for the "contract" scheme are driven to cast a scandalous libel on all the working miners, by declaring them to be a race of indolent and unprincipled men, who will not work unless they are continually watched! Now, this is a gross falsehood, and they know it to be so.

The captains themselves were generally industrious men, until they were put out of their element by having the pick and gad taken out of their hands, and, by virtue of their life-long occupation, all must know that the "pick" is the only "sceptre" that they know how to wield aright. I beg leave to rectify an error that has been allowed to pass current long enough. It is a common violation of all propriety to call a labouring miner, or a pick-and-gad man, *a practical miner*, as is usually done. You know well, sir, that a practical miner is a man of high scientific mining attainments, both theoretical and practical. We certainly should not call a poor journeyman carpenter *a practical builder*, or a slap-dash mason an *architect*, or a Robin Roughhead ploughman an *agriculturist*, or an ignorant bellows-blower an *organist*. This misnomer, sir, has been conjured up to justify the intrusion of *ignorance* into the seat of *science*. From all I have heard and seen, and know, I am persuaded there is no country in the world where metallic mining is so badly conducted as in England, or where mining operations are carried on so much at random—where so little work is done for the money—where so much time is spent in getting the work done—and where there are so much injudicious and erroneous drivings and sinkings,—and all this is the certain and legitimate consequence of giving the management of this most difficult and scientific profession into the hands of illiterate men; and by their setting the subterranean operations by "contract," they drive the miner to use what skill and cunning he possesses for his own profit, and without giving him the slightest inducement to exert himself to the best advantage for the benefit of the adventurers. I would respectfully invite the attention of the principal landowners of our Cornish mining districts, and briefly show how greatly they are injured by the unminerlike, protracted, and tardy manner in which many of our mines are worked.

Now, if a mine has yielded 50,000*l.* dues to a lord in 50 years, which, by good mining, might have been done in 15 or 20 years (to say nothing of the frightful loss to the adventurers), what a princely fortune has been lost to the family of this gentleman! for we know that, however extensive, large, and rich, the courses of ore may be underground, they bear neither principal or interest until they are brought to market. Let us review the history of nearly all our best mines in Cornwall, and we shall find that they were worked and stopped, worked and stopped again, lying idle for years between, some of them by three or four distinct companies of adventurers, before they came down to a profitable depth. Now, let us remember, that the courses of ore were *quietly waiting there* all the time; but in most cases the extravagant outlay, injudicious plant of the workings, and protracted operations, chiefly generated by the villainous "tutwork" practice, wearied out the patience, hopes, and finances of the proprietors, or discouraged by the false judgment of their rough hewn captains, who, with that positive assurance, which is the certain characteristic of an untutored mind, has declared their conviction that the lodes were not worth further development. The well-timed description of Foreign Mining Schools in your last paper (page 326) deserves the attention of your numerous subscribers—and is a full demonstration how indispensably necessary for a mining officer is a deep and arduous scientific discipline, both in theory and practice, in the judgment of the most enlightened and dignified rulers in the neighbouring nations. Permit me to quote the last paragraph of that paper:—"Belgium, Austria, Prussia, Sweden, Russia, and France, have establishments of this description, and we trust it will not be long ere England ceases to be the exception in the adoption of so excellent a plan."—JOHN BUDGE: *Callington, August* 4.

MINE SURVEYING.

SIR,—It is rather surprising that Mr. Budge, after having had an interview, and being made fully acquainted, with the name of the person who signed "The — Miner," should still persist in calling for his real name and address. I really do not know his motive for seeing my name in print, but having no inclination to disoblige, to turn my back, or to be *Budged*, I give it at foot. I have been at a loss to know what part of my first letter Mr. Budge pronounced to have been false, or whether he considered the whole of it to be so, but I now find that he alluded to this sentence only—"*There are many first-rate diallers, who know not what trigonometry means.*" Now, *I* call those men first-rate diallers, who, in their capacities *as mining captains*, have been called to conduct subterraneous surveys of almost every description, and who have completed their work *at all times* to the entire satisfaction of their employers—many of such, I can assure you, Mr. Editor, are to be found in this county. I do not pretend to say, that a knowledge of trigonometry is not exceedingly useful, or that a survey can be carried out to a *fractional part of an inch* without it; but this I must say—it is highly probable, that whilst we are stretching our orbits for a quarter or half an inch in the whole run of dialling, we often begin to see *double*, and eventually lose the sight of inches and even feet—otherwise, I cannot account for the glaring errors frequently made even by mathematicians themselves.

Allow me to say, that having worked underground on tutwork and tribute, and *by day-work too*, for a period of 17 years, and having since that time (11 years) been actively engaged in superintending mines, both at home and abroad, as well as having been called to inspect and report on a great number of others, I have had opportunities of examining diallings of every kind—and errors, of course, have presented themselves; but most of them, be it known, did not occur through a lack of the knowledge of trigonometry, but through a want of care in measuring the different angles, avoiding magnetic attraction, &c., without which even the mathematician would labour in vain for correct results. Too much importance has been attached to the solutions of problems, whilst the practical part of the work has been generally neglected. Would not Mr. Budge benefit himself, and confer a favour on mine agents, if he were to go on the mines and "teach the young idea how to shoot," by giving practical instructions on the spot: first pointing out the best method of making a surface survey, not forgetting the acclivities and declivities, obstructions, &c.; and, finally, going underground, and *there pointing out the danger* of not accurately adjusting the instrument—correctly measuring the angles—the propriety of attending to and avoiding the magnetic attraction of railway bars, pumps, and other iron work in shafts, &c., &c.? Most undoubtedly; then, why does not that gentleman adopt this plan? His *writings* are not likely to do any good; because, *first*, he does not write to *instruct*, but to *abuse*, and *condemn*, as *fools*, any who should bring forth arguments against his own hypothesis, though they might be as clear as the sun at noon day; and, lastly, he is always ready to expose the errors of others, but does not possess candour enough to confess his own—hence the reason that the seed sown about four years ago, did *not* bring forth any *good* fruit. Mr. Budge must know, that I was not the last who came forward at that time, and fairly discussed the subject of "Mine Surveying," theoretically and mathematically; and as I had then no other motive than to clear the stigma cast on myself and brother agents, so am I now, in giving a challenge to Mr. Budge, actuated by a similar principle, particularly as my present engagements will not allow me to carry on a second paper war.

Callington, August 4. ——— JOHN PRINCE.

MINE SURVEYING.

SIR,—You will oblige me by inserting, in your next week's Journal, an answer to the problem proposed by Mr. John Budge, of Callington, in the *Mining Journal* of last week, whose good example I hope soon to follow, by sending you a few problems, the solving of which I hope will be found a profitable amusement by that class of your readers, who wish to become well versed in this important science—without a *perfect* knowledge of which mining becomes doubly speculative; but as I have a press of other matter on my hands at present, I must defer that pleasure for a short time, and content myself by answering Mr. Budge's question:—

Easting.....	76 fms. 5 ft. 5 in.—	954,348 pts.
Northing	100 fms. 2 ft. 1 in.—	904,228 pts.

Barnstaple, August 5. ——— JOHN D. YOUNG.

LATENT HEAT AND RADIATION.

SIR,—The question of "latent heat," as it was termed by the illustrious discoverer of the phenomenon, is much more curious and complicated than seems to be generally entertained by chemists; and I am led to the subject by the cursory glance you have taken of Ryan's lecture on caloric, in your Journal of the 11th. True it is, decrease of volume, and increase of specific gravity, is accompanied generally, if not always, by an increase of temperature; and increase of volume, and decrease of specific gravity, usually followed by sensible cold. But there are curious exceptions, in the latter case, at any rate. Thus the slaking of burnt lime, and the solution of solid caustic potassa in water, are both accompanied by an increment of temperature—a fact incompatible with the latter assumption; thus, too, I find that chloride of azote, as well as iodide of azote (nitrogen), on the separation of their elements in the act of explosion, evolve heat sufficient to set inflammable substances on fire, such as the solution of phosphorus in sulphuret of carbon. One of the most curious questions relative to the radiation of heat, perhaps, is that which affects the negro's skin in the torrid zone. The fact, however, as proved *experimentally* by the late Dr. Ritchie, that black surfaces radiate heat with the same facility that they absorb it, and that too in the precise ratio, affords a satisfactory solution. I remember that Dr. Ritchie and I made some experiments on the radiation of heat in a torricellian vacuum, which completely disproved Sir John Leslie's hypothesis, of assumed "cold pulses showered from the superior regions of the sky." We also found, that the transit of reflected rays of heat was not affected in any way by the interposition of a skreen of water.

Portland-place, Hull, July 23. ——— J. MURRAY.

MR. BAIN'S INVENTIONS.

SIR,—About three weeks ago, I was in Edinburgh, and took that opportunity to visit Mr. Bain's manufactory; and I will frankly confess, that I have not been more highly gratified with anything I have met with for years, than with his very ingenious inventions. His electric telegraph and electric clock delighted me, as well as his marine log, for determining a ship's rate of sailing, and accurately itself regulating that rate in knots and their fractions. The latter pleased me by its extreme simplicity: when the ship moves the log necessarily floats, and revolves on its axis by vanes, like an Archimedian screw; a pensile revolving appendage, connected with tooth and pinion, moves a wheel, or wheels, attached to indices, which point out the rate of transit on dial plates—the pensile attachment always receiving the vertical plane by the laws of gravitation. I may add a curious fact, communicated by the captain of a ship, connected with this very ingenious invention:—On taking the log on board, it was found that more than one half had been carried away by some *sea monster*—fairly cut in sunder, laterally; the power of jaw, which could have thus snapt in twain this brass cylinder, must have indeed been enormous.

The electric telegraph of Mr. Bain recommends itself for universal adoption, by its extreme simplicity, for railroads. Instead of multiplied lines, there is only, in his, ONE line, and in the simple arrangement of the symbols and sentences, together with the equally simple manipulation, there seems to me to be left nothing to be wished for. Simplicity is here not only a charm, but something more solid and permanent. Its operation on the Glasgow and Edinburgh Railway is every way, I was informed, satisfactory, and realizing all that could be desired.

Mr. Bain's electric clock, however, is the great source of attraction. Nothing can be more satisfactory, or complete—allowing for tear and wear of materials from friction and the oxidating influence of the atmosphere, the *perpetuum mobile* is here certainly realised. As long as the electricity of the earth continues—or, in other words, as long as the laws of Nature last—so long will Mr. Bain's clock continue its oscillations, and register the transit of time; and I frankly confess, that there is nothing, were my means adequate, I should so much covet as the possession of one of these—I had almost said, sublimely-beautiful—electric clocks, which reflects so much credit and lustre on their ingenious inventor. It requires no prophet to foretell their entire ultimate adoption for public clocks; and how singular and interesting the reflection, that by means of wires, connecting the various public clocks of a metropolis with the main one, the pulse of the same *duplicate second* (for a double oscillation is registered) shall be *simultaneously* announced, however distant, or the index in the various rooms of a house, beat in perfect unison with the parent one—verily, we live in an age of wonders! This wonderful power is entirely derived from the electricity of the earth—the pendulum conducts, and is the treasury of that power, and two simple wheels and their attachments, with the dead escapement, complete the magic machine—mimic of the movements of the *mechanique celestro!* By an ingenious provision, Mr. Bain's electric clock, at the manufactory, extinguishes the gas light, which illuminates its dial, at half-past twelve precisely.—J. MURRAY: *Portland-place, Hull, July* 24.

THE TWO DIRECT LONDON AND MANCHESTER (DEFUNCT) RAILWAY SCHEMES.

SIR,—There is much more of righteous retribution going forward in this unheeding world than railway projectors have any just idea of. Only give time, opportunity, and other people's money, to the most confident and plausible public sharpers, and they will infallibly break down—let their phalanx of knavery be ever so strong. It is now two years and three months since, at Mr. Remington's request, I took upon myself the responsibility of bringing before the public his admirably conceived plan of railway communication between London and Manchester. How I succeeded in obtaining favourable publicity for his plan, and how I was ousted from my honourable participation in promoting it, are points frequently adverted to in the columns of your able and honest Journal, and which are gathered into my pamphlet, entitled *Railway Revelations*. I felt certain that the two companies, which had grown out of my original efforts in diffusing Remington's plan, would come, each of them, to a shameful end—for there was not a particle of public principle among the concoctors of the rival railway associations. I assert boldly that, the lines styled respectively Remington's and Rastrick's were made up for Stock Exchange cupidity to trade in, by two solicitors; and that, in plain fact, the noble public project of a Direct London and Manchester Railway became metamorphosed into the lowest lawyers' job that an Old Bailey imagination could possibly idealise. As there must always be a "winding up," good, bad, or indifferent, in human affairs, the days of doom appear to have arrived regarding those operations, conducted hitherto by the respective legal commanders in Moorgate-street. Meetings have taken place, of Remington's shareholders, without directors—of Rastrick's directors, without shareholders; and the only important disclosure made at either assembly is the certainty, that immense funds, subscribed ostensibly toward a great public undertaking, have found their way into the pockets of persons who still contrive to elude individual identification. Every attempt will be hardily and adroitly made to hide from view the real actors in this fraudulent farce; and it is for the purpose of shedding a little clear light upon these murky matters, that I once more take up pen on the subject of London and Manchester railway rascalities. Remington's amalgamated directors (11 in number) having betaken themselves (as alleged) to continental ease and exemption from writs and other angry law processes, a provincial hero, named Bass—a worthy fermentator of pale ales—leaps forth to enlighten the public as chairman, and sole producible director, at a meeting of the robbed and indignant Remingtonians. But poor Mr. Bass, although he foamed out a sort of speech, declared that he knew nothing, and, consequently, could give no information, satisfactory or otherwise, except as to the motive which induced him to become a railway director—and this furnishes us with a nice clue to the patriotism of men presuming to take a lead in public companies. Mr. Bass heard that Remington's line would run through some of his vats in Burton-on-Trent, and straightway the high-principled brewer resolves to turn railway director for the public good! I think it probable, that a certain Mr. Meteyard (now standing counsel to Rastrick's fallen committee) might give a somewhat different version of Mr. Bass's pathetic story, and, perhaps, it would ooze out that, instead of the alarming inroad into Mr. Bass's premises, the railway was deflected from its direction, in order to accommodate the Burton brewer. But, alas for patriotism! Writs, Chancery suits, London sojournment at his own cost, and possible falling off in the composition and compotation of pale ale—these are the ungrateful results of our Bass's disinterested meddling in railway affairs! Nothing can be collected from the proceedings of the Remington meeting, but that deposits on 51,000 shares have irrevocably departed from the purses of gulled and unhappy holders of scrip, three items being established in the way of expenditure—viz., 28,000*l.* to *buy out* three lawyers, 42,000*l.* to circulate among other lawyers, and some 40,000*l.* to Sir John Rennie, Mr. Remington, and the engineering gentry, who might as well have been surveying chaos. We shall find out by-and-bye (for discovery is gradual in railway matters), that other items are ascertainable—such as enormous advertising, setting up railway newspapers for the nonce, "bearing the market," as it is called in Capel-court slang, and all the infamous infinites of jobbery, which never terminates while a sixpence can be swindled from the victims of knavery. The Remington concern is lifeless and moneyless for evermore, with the exception of a surmised 7000*l.*, which, whosoever clutches, shareholders will *not*.

The Rastrick conclave was less numerous, being seemingly composed of 26 orthodox directors, and six dissenting scripholders. Mr. Dillon was in the chair, and demonstrated, with the aid of a rigmarole opinion subscribed by three barristers, that the meeting was an illegal one, but that he and his colleagues thought it was more "kind" to break the law, and meet! Mr. Dillon then launched out into an encomium on himself and brethren, for proposing to refund 3*l.* 10*s.* out of 5*l.* 5*s.* paid on some 90,000 shares. Eighty thousand pounds are to be kept discreetly in hand, in order to defend Mr. Dillon and his codirectors from the legal consequences of their unparalleled uprightness and liberality! But, on the subject of alleged amalgamation, Mr. Dillon waxed eloquent above and beyond all the rhetoric of Manchester warehouses. It had been endeavoured, said Mr. Dillon, "to fix an amalgamation upon two companies which never had been amalgamated, and were not up to that moment amalgamated. Remington's line had only 7000*l.* in hand, while Rastrick's had 400,000*l.* Now would it be desirable to form an amalgamation between two companies so differently circumstanced?" So, now it appears that the poor Remingtonians, after having parted with 42,000 sovereigns to the opulent firm of Dillon and Company, are actually repudiated by their *quondam* allies. As to the fact, of at least an intended amalgamation, Mr. Dillon must have lost his memory, but *I* have not; for, on a fatal day, in October, 1845, I was informed by Col. Stanhope, that he was just going to sign, together with Mr. Dillon, a "Deed of Amalgamation," for uniting the two rival companies; and the said deed *was* signed, whereupon 42,000*l.* became forthwith payable to the triumphant Rastrick cause!

Really the depths of deceit, the monstrous lying, the fathomless frauds, which have been engendered by the railway mania, baffle all belief.

I refer your readers to a letter of mine in your Journal (of Nov. 8, 1845) pointing out the manifest illegality of the amalgamation of provisionally registered companies; and so irate were Remington's committee, that I should dare to question the validity of *their* amalgamation, that they resolved not to pay me the expenses which I had incurred in promoting the project that they surreptitiously laid hold of, and by virtue of which they cozened the public out of the amount received on 51,000 shares! I am, however, better pleased on the whole, that the fugitive committee did not pay me a farthing of their voted gratuity. To expend lavishly in the most roguish jobs, and to stave off the settlement of honest claims, is the invariable system of all these bubble-railway promoters. My conviction is clear and strong, that five sixths of these abominable abortions of companies will flounder on, until they are sucked into the bottomless pit of Chancery. As long as the lawyers (who are the evil principle of railway fraud) can keep together the bones of skeleton schemes, they will infallibly do so, and by every quirk, seduction, and menace, they will labour to give a kind of galvanic life to dead projects; and when all fails, the solicitor to the company will file a bill in Chancery to protect the honest interests of legal chicane! In short, the whole railway world will be represented by their legionary lawyers in those blest abodes, yclept Master's Offices—of which I take the liberty to say, that such dens of Devildom are not to be met with out of Pandemonium. The ruinous procrastination—the collusive rapacity of plaintiff's and defendant's solicitors—the wilful blindness of official vindicators of *wrong*—these acknowledged attributes of a Master's Office, have caused the term equity to "stink in the nostrils" of a lawyer-ridden community. Yes! in the abyss of Chancery must railway difficulties, ere long, be engulphed. No warnings, no remonstrances, no conscientious misgivings, could arrest the progress of mad speculation; and, therefore, they who *sowed the wind*, must expect to *reap the whirlwind*.

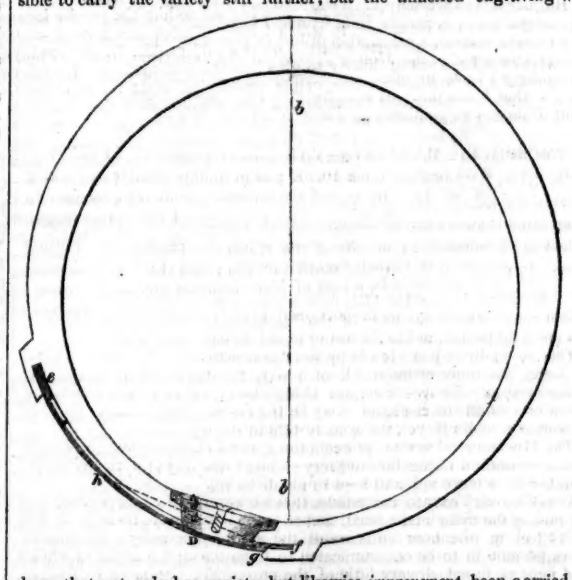
August 4. THOMAS MULOCK.

P.S.—It is but fair to remark, that there were some gentlemen on Remington's original committee of direction who supported the line on public grounds, in the belief that the project was one of national utility; but, as will be found, when all these schemes are scrutinised, the public spirited individuals were always out voted, and finally extruded from the amalgamated committee, consisting of 24 "smart men," as brother Jonathan would endearingly characterise them; and, by the way, we must cease all censure of American repudiation, &c., for the railway mania in Old England has giving birth to fraudulent villanies which throw Yankee shrewdness into the shade.

THE SUPERIORITY OF COMPRESSED AIR AS A MOTIVE POWER

SIR,—Having described a method by which a short line of railway may be worked on the compressed air principle by *one* stationary engine constantly working, and having also shown how the engine may have the benefit of whatever power remains in the air after it has performed its duty, I will now enter into some further details and modifications of the plan proposed. It should have been stated, that the top and sides of the magazines must be lined with some material to prevent the air from escaping; although it was supposed, that the train would run from one station to another by only admitting air at the end where it started from—yet it is not to be supposed that, in practice, it would be so, unless it is found to answer the purpose as well. The probability is, that it would be better to admit it frequently—at least, every mile or two—and, perhaps, it may turn out that, instead of causing the compressed air to return to the air-pump, it will be better to use it expansively. My own impression is, that it will be, in the first place—if the line was not an entirely level one—if it had inclines, levels, and declivities—much greater economy would be secured by using the air expansively than otherwise, as in that case the power employed would depend on circumstances. If an incline had to be ascended, the air would be turned on at full pressure at the commencement of that incline; and if the incline was succeeded first by a level, and next by a declivity, the supply of air would be cut off at such time as would give what was in the tube an opportunity of exhausting its expansive force by the time the train arrived at the commencement of the declivity—or, if the gradient was not sufficient for the train to run at the desired speed by its own gravity, the supply would be continued longer, or as experience might dictate. There are some reasons why it would be better to use rarefied, in addition to compressed, air, especially as no additional *steam*-engine would be required. A pair of small air-pumps, one at each of end stations, to be worked with compressed air from the magazines, and perhaps an extra one at the intermediate station, if the pump for compressed air would not answer both purposes. One reason in favour of the adoption of both principles is, that, if rarefaction was produced to 10 lbs. per inch, compression need not be carried so far by 10 lbs.—therefore, the substance of the tube, and communication pipes, and depth of the magazine, would each be proportionately less, and, consequently, less expensive. Another reason is, that, if a partial failure should at any time happen to either of the valves, the success of the other would prevent a stoppage, or serious derangement of the traffic, until the faulty part was removed, and a new piece put in its place. A third advantage would be the absence of any necessity for the valves to be opened, only just sufficient for the coulter to pass, as no air would have to be admitted or expelled.

The next (and, perhaps, the most important) feature of the whole system, as applied to railways, is the valves by which the opening in the tube is to be closed. On this particular part of the subject, no doubt, a vast amount of serious thought has been bestowed: a great variety of different descriptions of valves has already been published, and many have thought it impossible to carry the variety still further; but the annexed engraving will



show, that not only has variety, but likewise *improvement*, been carried a little farther than it had hitherto been: that, however, must be left for others to decide. Very little explanation of the drawing is necessary; for tubes and valves have been so often described in the *Mining Journal*, that a mere sight of a drawing, representing an atmospheric railway tube, must be quite sufficient for the readers of that paper. Nevertheless, a little explanation, if it will not do any good, can do no harm; and, as a commencement, I may state that the opening, instead of being (as it usually is) at the top, is pretty near to the bottom, as the perpendicular line *b b*, will show: by this disposition of the opening, the inner valve, which would be considerably the most difficult one to fix, requires no fixing—its weight will always keep it in its place; the inner valve is shown as it would be when rarefied air was to be used; when that was not the case, the piece C need not be made to fit the opening between the rebated edges where the valve lodges; A is a thin slip of steel; B is a piece of leather, or some compressible material, "destined to secure exact fitting." This completes the inner valve; and the outer one is still more simple—it is merely a thin piece of spring steel D, set to suit the circle of the tube, and fastened on a piece of leather *e*, in a groove, wrought in a projection on the tube: it shuts on another piece of leather *f*, which is also fixed in a groove wrought in a projection: this projection has that edge next to the valve bevelled or inclined towards the surface of the tube. When the air in the tube is rarefied, the arch-shaped valve *b* will be forced inwards with a uniform pressure, on the whole of its external surface; and being firmly fixed on one edge, will act with great force against the projection with the other—and the projection being inclined towards the tube, the valve will press with immense force on the piece of leather *f*, and render it, if not perfectly air-tight, as near so as possible. The edge of the projection being inclined, will not be any impediment to the valves opening—as a line drawn from the angle at *g*, to about the middle of the valve at *h*, will form a right angle with the inclined edge of the projection, so that it will pass freely. This valve should be made to press firmly on its bearing of itself, when the air is not rarefied: the supposition is, that such a tube could be made of wrought-iron, with the projections in the solid and wrought, or grooved, to receive the edge of the valve and pieces of leather; and that these could be fastened in, in a similar manner as a tenon saw-plate is fastened in the back, and, possibly, the leather might be dispensed with.

I said I would describe a new method of extracting air from the tube simultaneously; but I shall be obliged to defer it until next week, as it will occupy considerable space, and as there are a few other matters, which I wish to notice in this letter. A correspondent, who signs himself "Engineer, Blackfriars-road," made some remarks on the "Barometrical system," propounded by Mr. N. A. Burnier, apparently for the purpose of eliciting more definite information on the subject, which, I must confess, we are very deficient of at present; however, be that as it may, amongst other observations there was the following—"Every practical engineer is perfectly aware, that in the exhaustion of air from a tube, by even a double-action air-pump, a less dense body of air is taken out at every stroke, and, consequently, a large amount of power is expended in overcoming reaction." The result here spoken of is what every body, whether a practical engineer, or practical anything else, ought to expect; and without attributing the cause to the "reaction of the air," if the body of air taken out at each stroke do not become less dense, the *whole* power used would be wasted, and we might wait till doom's-day for a vacuum, or anything approaching it. He goes on to say, that "in the compression of air the loss is, doubtless, still greater; the exact amount, however, is yet undefined; it is most probably less than the exaggerations of some would make it, and greater than others are aware of." I am somewhat at a loss to understand what engineers mean by the *reaction* of air; do they mean, that when the particles, of which it is composed, are brought in closer contact during the stroke of the engine, an irritated disposition is excited in those particles for mutual repulsion; and that it offers greater resistance during the act of compression,

than it would be capable of exerting afterwards, and that it will not resume its original bulk; or what is it they do mean? Perhaps "An Engineer" will be kind enough to inform me.

I will now have a word or two with Mr. Burnier, who advises the good gentleman, whose remarks are noticed above, "To always support his observations by some arguments, or figures." Most men are rather profuse in giving advice, but spare in acting on it themselves; and Mr. Burnier is not an exception, for he puts some questions and answers for the benefit of an "Engineer," without a word or figure to prove the correctness of those answers—doubtless, he would have discovered his error by attempting to do so. He supposes that "M. X." exhausts continually his reservoirs to 20 in., and works his railway at 15, and puts the following question—"Taking the capacity of the propelling tube to be equal in size to each reservoir, what will be the number of reservoirs necessary to exhaust it?—*Ans.*: Three." In each of those reservoirs we have two-thirds of a vacuum; if a communication is opened between one of them and the tube, it will extract one-third of the air from the tube, and the reservoir and tube will have two-thirds each, or 10 inches. Now, if a communication was made between another of the reservoirs and the tube, it would extract one-fourth of the remaining two-thirds, and they would have half a vacuum each, or 15 inches of mercury.

It may now be seen, that Mr. Burnier's answer to his first question is not correct; and now, with regard to the second—viz.: "What number of reservoirs will be necessary to withdraw the air from the tube, and produce traction?—answer: three"—this answer is also incorrect, if the *average* tractive force is to be considered; for, if a communication between the tube and the three reservoirs was made simultaneously, a tractive force of 18·75 in. will be obtained at the commencement; and when half the journey has been performed, 17·25 in. will remain; at two-thirds of the journey, the mercury will fall about half the distance from 18·75 to 15 in. —that is, supposing that no leakage takes place, nor any expansion from heat or friction. The above results are obtained in the following manner: —For the first, I take the sums of inches of the three reservoirs, and of the tube—add them together = 75 ÷ 4 = 18·75. Observe—including the tube, there will be four reservoirs of equal capacity; and, consequently, the difference in quantity of air contained by the tube over the reservoirs will be divided between it and them, which, being five, will be 1·25 in. each. For the second result, I take the sums of inches of the three reservoirs as before, and suppose, that all the air which was in the tube at commencement of this second part of the exhaustion to be still in it, and its capacity being reduced one-half, the mercury will have fallen from 15 to 0 in.: we have, therefore, only to take the three twenties = 60 ÷ 3·5 (the capacity of half the tube and reservoirs) = 17·25. The tractive force at two-thirds the whole, or any part of the journey, may be found in a similar manner;—thus, we find that, instead of a travelling power of 15 in., we should have an average of nearly 17·5 in.; and, on examination, it will be found, that two reservoirs for the second part of the exhaustion will yield an average of upwards of 15 in.—as two-thirds of the distance will be performed before the tractive force will be reduced to that degree. However, such minute calculation is quite unnecessary,—for, in practice, the above results, owing to leakage, expansion, and one cause or another, would never be obtained; and my object, in going into such minutiæ, is not to shield the "only *legitimate* system of any engineer" from detection, as a *bastard*—because I know it to be one—but for the purpose of showing that, although Mr. Burnier has expressed such a warm affection for truth, he has not been very scrupulous in departing from it; and I beg humbly to submit, for his serious consideration, a calculation of loss of power, by pumping from reservoirs, contained in the *Mining Journal* of the 26th July, 1845. The best apology I have to offer, for trespassing so much on your valuable space, is that I was desirous of removing erroneous impressions from the minds of those two gentlemen.—JOHN WESTON: *July* 29.

ATMOSPHERIC RAILWAYS—THE BAROMETRICAL SYSTEM.

SIR,—The Barometrical apparatus is a large pump, capable of working a line in a single stroke. Its special construction avoids the expense of a piston fitted to such a large cylinder—avoids also the friction of that piston: no leakage is possible in it. No power is lost in opening and shutting valves—in changing the circular motion of the engine into a rectilinear; and it possesses this special advantage, that the power necessary to open a certain space can always be proportioned to the real resistance; the rarefied air is collected, and made use of in the whole of its value.

This air-pump is not worked by the direct action of the steam-engine; its piston, the inner cylinder full of water, represents, when raised, the power necessary for its action, and this power, produced by the constant action of a small steam-engine, may be the result of one hour or more of its working, and still be employed instantaneously.

The Barometrical system presents the general characteristics of economy—a constant and regular working—a large quantity of work performed together in a large apparatus—a single direction.

It will be very easy to understand, that whatever be the means employed for raising the cylinders, a small steam-engine may raise them of 12 feet or 14 feet in one hour (this is all the motion necessary), by making its rapid motion to be communicated to them through a series of wheels and pinions, in which very little of the power will be wasted by friction. As the cylinders are becoming higher and heavier, the same stroke is caused by a compensating mechanism to produce a less effect—the power of the steam-engine is thus regular and constantly employed. The power necessary for working every hour one mile of 12-inch tube is only 2½-horse powers.

As regards the waste of power by friction, we are confident that no apparatus can be made, presenting a less amount of it. The facility of exhausting at once immense lengths of tube, allows stations of six miles, and does not require any loss, by the production of a higher exhaustion, to compensate the difference caused in the gauge at each end, by the length of the tube exhausted. The rarefied air is collected, and highly rarefied air, in the beginning, is used after, under a smaller volume. The direction of a single superintendent at each station would ensure altogether safety and economy.

We can thus say, that our power is produced in all the best circumstances of economy; and we must add, that it is, by the nature of the body which represents it, free from any chance of loss, from any interference of causes, tending either to lessen eventually its value, or to expose it to great liability of waste.

Let us suppose, for instance, that, instead of raising water—a body of very little subtlety—a liquid of a constant bulk—we were to represent our power by some gaseous body, either compressed or rarefied, we would stand in a very different position. Without speaking of the loss, which must necessarily exist in the production of those gasses, at a degree of density different from that of the atmosphere, in consequence of the apparatus employed for that purpose, we shall only observe, that any gas receives from caloric an increase of bulk; that any time a gas is brought to a degree of density, different from that of the atmosphere, its calorie is either increased or lessened; and that, in any of these cases, the increase, or the loss of bulk, destroys partially the effect of the compression, or exhaustion. Air kept in reservoirs will vary in its dynamic value, according to the temperature. And, besides, if we compare the chances of escape of air, with those of water, we find that, in any circumstance, the losses of the former will be 1000 times more considerable than those of the latter—that losses will exist in one case, when there is no possibility of them in the other; and when, with such causes of waste, air is proposed to be kept for days, for months, in reservoirs, we think that the very instructive example of the *Compressed Gas Company* has been quite forgotten, because the results of this undertaking prove enough against the employment of any gas as a permanent store of power. We do not doubt the possibility of making air-proof reservoirs, but we know the difficulty of it; and we think it much more reasonable to store our power under such a form, as presents the least chance of being constantly escaping from us, when we want to employ it. Compressed air and rarefied air are powerful agents when instantaneously employed; in any case their employ, their existence, must be as short as possible: they are a proper intermedium for conveying a power; but any power, stored in compressed gas, is, and will always be, most escapeable, most subject to waste.

The Barometrical apparatus presents besides, between the power represented by the inner cylinder and the resistance of the tram, a *transition* in which nothing is lost. This will be better understood, when we have explained how we open, by the fall of 12 feet of water, a space between the cylinders of 28 feet.

We shall suppose, that we want to work 6 miles of a 12 in. tube. For this purpose, we want six sets of cylinders, 47 ft. in height, and 19 ft. in diameter, and two or three additional cylinders, to be used in case of need. We shall place those cylinders in a reservoir, about 110 ft. in diameter, and 75 ft. in depth, and full of water, till about 17 ft. from its bottom.

Around every cylinder a cast-iron frame will be constructed to the height of 55 ft., and six large wrought-iron screws 20 ft. in length, placed upright at the top of this frame, will be disposed—so that four of them, corresponding to the inner tank, can raise or lower it in their simultaneous revolution, and the two other produce the same effect on the outer: these screws are calculated to be 14 in. in diameter, with a 3 inch square pitch —the greatest weight of the apparatus being 320 tons. The female screw, inside which they turn, is so disposed, that the weight will be all supported by 228 small cast-steel rollers, disposed so as to turn regularly on the inclined plane, represented by the pitch of the screw.

The four screws of the inner cylinder being connected together, above the level of the ground, by large cog wheels, and the two screws of the inner the same, they can be caused to ascend or descend by the application of any power to those cog wheels. These two systems of screws can be at pleasure connected by the intermediary of a compensating mechanism, which is nothing else than a series of cog-wheels, about 16 in number, standing loose on two shafts, and so disposed that they pass successively from a very small diameter to a very large one; and that the large wheel, on one side corresponding to the small on the other, the coupled wheels pass successively from the little to the large, and from the large to the little dimension. It is then easy by a mechanism existing inside the shafts to fix such or such of the sets of wheels, and thus to transmit a proportionately more or less quantity of motion.

The inner cylinder, in its lowest position, must be always 16 ft. above the level of the water in the reservoir; it is from this point that we begin raising it, by causing the steam-engine to work upon the cog wheels of its screws, and we raise it in this manner about 16 ft., or 32 ft. above the level of the reservoir: the outer cylinder is then lowered to the top of the inner; and we begin operating by shutting any communciation with exterior air, and letting the air of the propelling tube between the cylinders. Our column of 32 ft. descends; and, as its enormous pressure is very superior to that necessary, the first part of space is obtained by its falling $\frac{1}{16}$th part of it, and raising the outer cylinder $\frac{15}{16}$ths. As the rarefaction increases, the inner cylinder descends more, and the outer is less raised, till at last, when we come to our original level—16 ft. above the level of the reservoir—we have produced a space of 28 ft., by the fall of our 16 ft. of water; and this space being that necessary for *exhaustion* and *traction*, the train has been carried to its destination.

We possess still in the cylinders 28 ft. of half rarefied air, or we have on the top of the outer a pressure of 7·3 lbs.; we employ this pressure in causing it to descend, and raise by its fall the inner, of a proportional quantity, which is about 3 or 4 feet—it follows that from a new operation we start from about 20 ft. above the level of the reservoir, and want to raise our cylinder only 12 ft.

The power necessary for raising the cylinder to this height is exactly the useful power—thus, by the Barometrical system nothing is lost in the *transition*. The expression of the results of the Barometrical apparatus is this—*the power necessary to carry a train by the Barometrical system is that capable of raising to the barometrical height of the liquid employed a quantity of that liquid equal to the capacity of the propelling tube.*

We do not think that, after such wonderful works as those performed for making railways, any objections could be raised against building for their economical working, at every six miles, such apparatus as we have described. Is there economy—real, entire economy? This is the question; because, then, the saving of a month, of a week, would give back on some lines the capital spent for construction, which, being simple, could not be very expensive.—N. A. BURNIER: *Dufour's-place, July* 22.

GREENHOW'S GEOMETRICAL RAILWAY.

SIR,—*We* or *I* (*ad libitum*) do not find in Mr. C. H. Greenhow's answer any reason of altering our opinion on his *geometrical railway*. This opinion is based upon better authorities than Mr. Greenhow should suppose; and, if this gentleman chooses to learn from them what we have told him, he only wants to make himself acquainted with the works of Mr. Nicolas Wood*, of M. C. Dupin†, or with any good treatise on mechanics. He will see there (as we give him, for the future, credit for perspicuity enough to distinguish the same thing, though called by two names)—he will see that the resistance of rolling surfaces bears no comparison with that of rubbing surfaces; that the reduction of the latter kind of resistance (that we called *friction*) to the axle of the wheel—whilst the former, or *superposition*, exists all around the tire—reduces the resistance of a load to the 12th or 13th part of the amount when it is rubbing. We have been mere intrepreters; and such we shall always endeavour to be, when we have before us such respectable evidences. These epithets of *shallow, superficial, stupid*, so *gentlemanly* applied to our notice, are some poetical licenses intended to produce a great oratorical effect, but which prove nothing better than want of argument, and are, indeed, honourable in such society.

The non-increase of resistance by the increase of the surfaces in contact, partly referred to in our notice, has been established, even for the case of rubbing surfaces, by the valuable experiments of Coulomb, Mr. G. Rennie, MM. Dupuit, A. Morin. ‡ We extract and compare the following passages:—"With harder substances, such as iron, &c., the amount of friction is as the pressure, without regard to the surface."—(Mr. G. Rennie: *Phil. Trans.*, 1829.)

"One body moving on another must meet with resistance, and, consequently, create friction—therefore the smaller the point of contact, the less will be the resistance; this proposition is the very basis on which the theory of railway construction rests."—(Mr. Greenhow: *Mining Journal, Aug.* 1.)

The basis, on which Mr. Greenhow places the construction of railways, is exactly the contrary of that adopted by Mr. G. Rennie, and others; and we must not wonder at his being, for his details, at a little difference with some other authorities of a similar value.

A flange in a wheel is intended to act only when there is a change, either in the direction of the carriage, or in that of the road; each case may be called a disorder. The action of a flange increases naturally the resistance; it should then be so constructed, that it should act as little, as seldom, as safety would allow; instead of that, in the concave tire, the whole is a flange, continually acting.

It is very easy to draw the figure of ordinary rails and wheels—flanges nearly as defective as those of Mr. Greenhow—because they are very much like them. If this gentleman likes to compare the chance of friction of circular rails with those of such rails as are employed on the Great Western, on the Lyons and St. Etienne, he will find less facility of assimilation.

In the pamphlet (page 8), the author expresses himself opposed to any play left between the flanges and the rails; he adjusts exactly his tires to the rails. In the letter of the 1st August, this play is admitted—the tires so exactly fitted are no more in contact; the cabalistic number of 22½° for the inclination of the spokes, the only capable of allowing their full effect, is reduced in one of the last figures (*Patent Journal*, July 25) to about 12°. Why all these *oscillations* in Mr. Greenhow's proposals? We cannot say; but they are a certain mark of little fixity—and, were they seriously intended, we cannot but congratulate the author of his *tacit* return to better ideas.

When any invention is presented under the patronage of a positive science, as a deduction of this science, its value is very easily tested, because it becomes a simple theorem. Mr. Greenhow has called his railway *geometrical*—has drawn some *geometrical* figures to establish it; and thus the only question to be decided is, whether the conclusions drawn from those figures are right or wrong? In the first case, his railway is positively established; in the second, it is condemned "without appeal."

It is to be naturally supposed, that, in these figures, the most favourable dispositions, to the clear understanding of the question, have been adopted —that, from these figures, can be deduced the best arguments of the inventor, because he is interested in removing at once all objections.

We thus have taken the fig., No. 4, on which, Mr. Greenhow bases the advantages of his inclined spoke—we have adopted his same centre of gravity, and proved that the real solution of the problem was entirely against Mr. Greenhow's conclusions. This gentleman does not protect his figure—he recalls his intentions—he pretends that we did not consider the body in the same condition as he did, as he intended to do. We know not any part of Euclid, in which intentions, not expressed in the figure considered by material signs, as reckoned as quantities. We did adopt the same centre of gravity drawn by the author, and it is a great pity that he forgot to have it as "the point which influences the equipoise of the momentum."

Mr. Greenhow thinks to evade the question by a more or less understood definition; but we shall remind him, that the centre of gravity of a same body is in any case, under any circumstances, always the same point; and that, in the case of a moving body, as a railway carriage, all the points of which describe parallel lines, this immoveable point is also the centre of projection. There is thus no change introduced in the problem by this pretext of *motion*. Mr. Greenhow will not find in Newton's *Principia*, in Euler's *Trajectories*, any proposition to make right what is *geometrically* wrong.

Geometry consists not, as we should suppose it, from Mr. Greenhow's pamphlet and letter, in drawing a certain number of figures, formed of lines, of angles, in drawing new ones when some have failed. A geometrical deduction must result of clear arguments, of positive equations, solved according to the laws of the science; and of this mode of solution we cannot, despite lines and arrows, find any example in Mr. Mr. Greenhow's pamphlet and letter.—N. A. BURNIER: *Dufour's-place, August* 4.

* *Practical Treatise on Railroads*, 3d ed.: p. 354.

† *Geometrie et Mecanique Appliquers aux Arts*, tom III., p. 396.

‡ *Nouvelles Experiences sur le pro Nement*: Paris, 1832. *Nouvelles Experiences sur leg tirage Desvoitures*: Metz, 1839.

THE GODWIN SANDS.

SIR,—I perceive human ingenuity and perseverance are not yet exhausted, or worn out, by the repeated failures, to rear on the Godwin Sands, a refuge for the shipwrecked mariner. I need not say, that these philanthropic efforts have my anxious and warmest wishes for their complete success. It occurs to me, that in addition to the floating life-buoys, with which it is proposed to surround the column, that two *life-boats* should be added; those, for instance, made of *India-rubber*, which would not suffer by the impulse of the breakers, or rebound from the column, to which they should be attached by ropes of "coir" (fibre of the cocoa nut), which are both strong and elastic.—J. MURRAY: *Portland-place, Hull, July* 23.

IRON MILK PANS.

SIR,—I perceive, by your correspondent's letter from Paris, that *iron* milk pans are being adopted in France, instead of earthenware or glass. I must confess, I have strong objections to *metals* of any kind being used for such a purpose; the avowed object is to keep the milk *cool*. If the iron pans be *enamelled* inside, I see no objection to their use—otherwise a *salt of iron* would inevitably be formed, the agency of which would be more than questionable. Nothing could have been worse than pans of *zinc*, which had also been previously employed, and which, of course, evolved a *poisonous* salt of zinc. The safety even of tin churns I more than doubt. If it be merely required to keep the milk cool, why not employ porous earthenware, so admirably proved efficient in the alkanzzaras of Spain?

Portland-place, Hull, July 23. J. MURRAY.

DR. CLANNY'S LAMP.

SIR,—It is really surprising to see how your scientific correspondents stultify themselves, when writing on the subject of the safety-lamp. From the modesty, which is ever the test of genuine worth, displayed by the doctor, I believe, at the Society of Arts, where I had the pleasure of seeing his invention, and hearing a description, I am inclined to think that he will not deny "*the meed to merit due!*" At the Society of Arts, on the occasion referred to, without (I trust) any manifestation of that spirit of clanship, which is still too rife in the uncivilised parts of the kingdom, I vindicated the rights of Sir Humphrey, as to the one great principle embodied in his lamp, notwithstanding flame may be *blown* through it—viz.: that the flame will not ordinarily pass through wire gauze, or perforated metal, &c., with holes or openings of a certain size, or mesh! This principle we still claim, as a part of the *doctor's* lamp, without attempting to undervalue the improvement said to have been made. The principle referred to was the result, as I recollect reading many years ago, of a long series of experiments! and not the momentary inspiration of inventive genius. It was the result of "sensation and reflection"—experiment and observation; and it is, therefore, hoped that, in the future notices of the Clanny lamp, by himself or your correspondents, the wire gauze will not be sacrificed to the glass and metal shield, however ingenious in construction.—ALFRED T. J. MARTIN: *Penzance, July* 22.

THE TOWANS AND FLORA OF PHILLACK, &c.

SIR,—Being in the neighbourhood, I have walked on those wonderful deposits of sand, called the Towans. I think I have heard that those sands are composed of *carbonate of lime*. They have been used for ages as manure, and yet the sides of the mountainous heaps scarcely appear to be touched. It was thought the Hayle Railway would convey myriads of loads eastward for manure and stucco, but unfortunately that road extends but a few miles east, in a locality pretty well sanded, and where other manure is, therefore, preferred. There can be no doubt, however, that, on the completion of a Cornish railway, a vast traffic in this sand will take place, which, being (from exposure to the rains and the atmosphere during the long period that evidently caused their present vast comparative elevation from the sea, or the retirement or subsidence of the latter) free from saline particles, will, doubtless, be employed in ornamental designs, and works of art. The wild flora of the district, and particularly of the Towans, would seem to be worth the careful inspection of a botanist, as there appears to be some very minute plants, now all in blossom, that the writer does not remember to have seen described or drawn, though on this point he may be in error.—A. T. J. MARTIN: *Hayle Copperhouse, July* 22.

P.S.—There were copper works here some years ago, when the slag, glass, or scoriæ, was cast into blocks, of a rectangular shape, about 15 in. by 12 in.; also square, semicircular, and a variety of shapes and sizes, for building purposes. One purpose, for which they answered exceedingly well, was hedge building, for dividing fields—the half-round pieces serving for caps; they have been also extensively used for barns, outhouses, and dwellings, and even now they sell at 6d. each.—This is a hint for other copper works.

VENTILATION IN SMITHIES AND FOUNDRIES.

SIR,—Having visited a certain locality, I went to the churchyard to see the average ages on the tombstones of the poor, which, being here composed of slate, seldom last 50 years, and often only 10 or 20. It is, however, astonishing to notice how small a number of working men reach the average of other, and more healthy, districts of the kingdom. I met a man, a smith, and asked him, whether there were many old men about? His answer was—"How should-a-be; wi so much hard work, in smoke, and bad air?" Passing by the smithy, with 10 or 12 forges and furnaces at work, the smoke issuing from the door and windows, I saw some men trying to catch a breath of fresh air at the former, and others gasping at the latter. Is it not a disgrace to the wealthy proprietors of these large establishments, that some means of ventilation is not adopted, which would secure, at least, a sufficient current of pure air for breathing, and not leave the men to be thus suffocated by degrees, and brought to a lingering death, in these abodes of disease and gloom?—A. T. J. MARTIN: *Penzance, July* 30.

ATMOSPHERIC RAILWAYS IN FRANCE.—At a short distance from Paris —the Palace of St. Ouen—a model railway is laid down for experimenting on the atmospheric system of railway propulsion; it is 3000 metres, or 9000 ft., in length, and runs round the outside of the park wall, on M. Hediard's plan, which we have before noticed, and which consists of two blades of highly elastic steel pressing against each other, and allowing the coulter of the piston to pass between with but little friction; the tube is 40 centimetres in diameter, and is exhausted by an engine of 40-horse power. The trials hitherto have been favourable, the working vacuum is quickly formed, and the carriage has attained a speed of 51 miles per hour. *M. Pecquier's System.*—This is a plan for working an atmospheric tube by compressed instead of rarefied air—and, except in some of its modifications, is on the principle of any of the known systems, as regards tube, piston, &c. By employing compressed air, the inventor considers many advantages will be obtained—such, for instance, as in ascending or descending inclines—the power can be regulated to any required pressure; much greater economy, he believes, is secured than by rarefaction, and the chances of accident lessened.

EXTENSION OF PATENTS.—In the case of "Ledsam *v.* Russell," which came before the Court of Exchequer, some time since, the question at issue was, whether the Crown could legally extend letters patent after the expiring of the term for which they were originally granted. The Solicitor-General, for the plaintiff, contended that the Crown had no power, after granting letters patent, to grant any extension thereof after the expiration of that term. By the 2d and 3d Vic., it was enacted that the Crown should grant no extension of a patent, unless the petition shall have been prosecuted with effect, before the expiration of the original term. Mr. Montague Smith held that the Crown had power to grant a new patent after the old one had expired, if a petition had been presented, and witnesses examined; this was prosecuting with effect, and all that had been done, and a report made in favour of the grant. The Chief Baron would give judgment on a future day.

Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.

MONDAY.....Great North of India Railway—offices, at Twelve.
TUESDAY.....Pilbrow's Atmospheric Railway—London Tavern, at One.
Dunstable Railway—Euston Station, at One.
Kent Atmospheric Railway—London Tavern, at One.
WEDNESDAY...North Kent Railway—London Tavern, at One.
General Shipowners' Society—Hall of Commerce, at One.
THURSDAY.....Northern and Eastern Railway—Shoreditch Station, at One.
Norfolk Railway—offices, at One.
Charing-cross Bridge Company—offices, at One.
British Rock and Patent Salt Company—offices, at One.
Gloucester, Aberystwith, and Central Wales Railway—Railway Protector Office, Bucklersbury, at Twelve for One.
SATURDAY.....Cornwall and Devon Central Railway—London Tavern, at Eleven.

[*The meetings of Mining Companies are inserted among the Mining Intelligence.*]

THE LONDON AND COUNTY JOINT-STOCK BANK.

The half-yearly meeting of this company, was held at the London Tavern, Bishopsgate-street, on Thursday, the 6th instant.

WILLIAM HAWES, Esq., in the chair.

The SECRETARY read the notice convening the meeting, and the following report:—

REPORT.

"Your directors have much pleasure in laying before the meeting the statement of the progress of the company during the past half-year. Your directors have declared a dividend at the rate of 6 per cent. per annum, free from income-tax, on the capital stock of the company; and recommend that the surplus of net profit on the half-year, amounting to 1498*l.* 4s. 11d., be carried, as usual, to the reserve fund, which will then amount to 20,056*l.* 7s. 5d. The dividend will be payable at the head-office and the branches, on and after Monday, the 17th inst."

The CHAIRMAN said that, this being the half-yearly meeting, they had not gone so much into detail with the accounts; but he had no doubt the statements they had just heard would prove satisfactory. (Hear, hear.)

A PROPRIETOR complained of the custom of the directors retaining the bonds given with the clerks after they had left the service, which, he said, ought to be delivered up after a limited time.—The DIRECTORS thought differently; and said the bonds were perfectly valueless, though retained, except in case of the dishonesty of the clerks; it was a matter of form adhered to by the directors, and was necessary for the security of the bank.—This seemed to be the opinion of the meeting, and the conversation dropped.

The report and accounts were then adopted unanimously.

The CHAIRMAN moved, that the balance of 1498*l.* 4s. 11d. be carried to the reserve fund, which was passed unanimously.

Mr. GREY asked, if the capital was the same now as on the last occasion?

Mr. COOPER said, there was an increase, during the past 12 months, of 40,000*l.*

Mr. GREY wished to know, if they were still issuing shares?

The CHAIRMAN said, at a premium; they had stopped issuing shares at par for the last six months.

Mr. GREY understood that would close at 10,000 shares.

Mr. COOPER said 10,000 were issued; but no more would be issued at par.

Mr. GREY thought the meeting ought to decide at what premium the directors ought to issue the shares. (Hear, hear; no, no.)—The CHAIRMAN said, that question should really be left to the directors. This was the first time they had considered the question; and it must be remembered, that it was the first time they had paid a 6 per cent. dividend. (Hear, hear.)

Mr. COOPER said, that in case of any fresh issue of shares, the proprietors would first have the preference. They considered they had a sufficient working capital at 200,000*l.*, so they stopped issuing at par. They might issue again perhaps, in six or 12 months, or at some other time, when the shareholders would have every consideration, and no one more so than the hon. proprietor, who was one of the best and earliest friends of the company.

Mr. GREY asked, if they could call up the deposits upon the present number, before the whole 20,000 were called up?

The CHAIRMAN said, it would be a matter of policy, whether they had better issue shares, or make another call.

Mr. OSBORNE then moved a vote of thanks to the chairman and directors, for their able management of the affairs of the company.—Mr. GREY seconded the motion, which was passed unanimously.

The CHAIRMAN returned thanks for himself and colleagues, for the confidence they reposed in them; and he hoped the payment of a 6 per cent. dividend was the best earnest that they had given their attention to the duties imposed upon them as directors. (Hear, hear.) The progress of the bank had been uninterrupted during the last six months, and he hoped it would so continue. He would just mention that, during the last year, they had increased nearly 200,000*l.* in their current and deposit accounts, and between 3000*l.* and 4000*l.* in their net profits. (Applause).—The meeting then adjourned.

CORNWALL AND DEVON CENTRAL RAILWAY.—A meeting of scripholders was held, on Saturday last, for the purpose of deciding whether the scheme should be abandoned or continued. The chair was taken by HUMPHRY WILLYAMS, Esq.,—when a motion for dissolution was put and seconded. An amendment was proposed by Mr. D. W. Harvey, for appointing a committee of seven shareholders, to look into the expenses and future prospects of the undertaking, and to report to the shareholders. Both resolutions gave rise to much discussion, in which Mr. D. W. Harvey, Mr. Osborne, Mr. Thomas Harvey, Mr. Masterman, jun., Mr. Bigg, the chairman, and others, took part. Several complained of the directors throwing themselves into the hands of the South-Western Company, and going on with the company when they knew it had no chance of succeeding in Parliament. Mr. Masterman replied to the observations in a manner, which seemed to be satisfactory. As the chairman refused to decide by a show of hands, a portion of the meeting retired to another room, where they chose Mr. D. W. Harvey for chairman, who proposed that a committee of seven shareholders should be appointed to ask for the inspection of the accounts, and to confer with the directors as to the past and future prospects of the undertaking, and to report to the shareholders on Saturday, the 15th inst. In the original meeting, however, the chairman persisted in the appointment of scrutineers, to test the feeling of the meeting; when there appeared to be—for going on with the project, 54,614 votes; against, 545; majority, 51,069. The total number of shares represented in the room was 57,566. Of this number there were 4566 held by the directors, and 30,000 by the South-Western Company. From the analysis it appears, that if the directors had voted, the majority for proceeding would have been 55,635; and that, if the South-Western Company had not voted, still there would have been a majority of 21,069. The chairman signified that, in case of a dissolution *instanter* of the company, the funds were such as to afford a return of 2*l.* per share.

GAUGE OF RAILWAYS.—The bill which has passed the House of Lords, entitled "An Act for Regulating the Gauge of Railways," has been printed. There are nine clauses in the measure following the preamble, "Whereas it is expedient to define the gauge on which railways shall be constructed." After the passing of the act it is not to be lawful, except in cases mentioned, to construct any railway for the conveyance of passengers on any gauge other than 4 ft. 8½ in. in Great Britain, and 5 ft. 3 in. in Ireland. The exceptions are set forth, and on certain railways the broad guage is to be used. By the 4th provision, it is declared, that after the passing of the act, the gauge of any railway used for the conveyance of passenger is not to be altered. Railways constructed contrary to this act may be abated. There is a provision for the recovery of penalties.

RAILWAY CALLS.—Calls to the extent of 800,000*l.*, for carrying on the works of different railways, have been announced as payable between the 1st and 18th of the present month.

CALEDONIAN RAILWAY—IMPORTANT INTELLIGENCE.—The long protracted contest between the Caledonian Railway Company, and the Glasgow, Dumfries, and Carlisle Railway Company, was terminated on Wednesday, by the committee of the House of Lords finding, that the portion of the line between Cumnock and Annan shall be leased to the Ayrshire Company, and the remaining portion, between Annan and Gretna, to the Caledonian Company. The Caledonian Company have also got power to make the branch to Canobie. This decision gives full effect to the proposition made by Mr. Hope Johnstone, the chairman of the latter company, in his letter to the chairman of the committee; and has the effect of converting the Nithsdale line from a competitor into an important feeder of the Caledonian, by giving the latter, on very moderate terms, about 20 miles of the traffic between Carlisle and the western portion of Dumfriesshire and Ayrshire, and about 50 miles of the traffic between Edinburgh and these localities; whilst, at the same time, the Caledonian Company will be saved an outlay of about 700,000*l.*, which would otherwise have been necessary, for the formation of the branches originally projected by them, for the purpose of gaining command of the traffic of the district.—*Scottish Railway Gazette.*

SCOTTISH CENTRAL RAILWAY.—We have just learned that the opposition of the Caledonian Railway Company to the amalgamation of the above company with the Edinburgh and Glasgow Railway, has proved successful—the bill having been thrown out on Wednesday, by the committee of the House of Lords.—*Ibid.*

THE ATLANTIC AND ST. LAWRENCE RAILROAD.—Ground was first broken upon this important work on the 4th inst., and the ceremonies on the occasion appear to have been solemn, appropriate, and imposing. An immense crowd of spectators were assembled, and a very deep interest was manifested for the enterprise. The spot selected for the ceremony was upon the very parapet of Fort Lawrence, and nearly the whole entrenchment, it is said, will be obliterated by the roadway. Judge Preble and Governor Anderson threw up the first earth, amid the discharge of cannon and ringing of bells, and other signals of rejoicing. Two directors of the Canada branch of the line, two Canada stockholders, the presiding officer of the Maine Legislature, and many other distinguished citizens, were present on the occasion. Addresses were delivered by the governor and other gentlemen; and, at the conclusion of the ceremonies, the corporation and their guests took a steam-boat excursion in the harbour. On the whole, the proceedings gave very hearty satisfaction, and afford, we hope, an auspicious augury of the full success of this important public improvement.

PROGRESS OF THE ATMOSPHERIC RAILWAY SYSTEM.

[From the reporter of the *Morning Herald.*]

A few days since, I had an opportunity of testing the speed on the Croydon Atmospheric, with light passenger trains, with the velocity reached on the Eastern Counties line with the special train to Yarmouth, the working of which I gave about a fortnight ago. Until within the last three weeks the Croydon Atmospheric had ceased running for some time, in consequence of the melting, during the recent extreme high temperature of the weather, of the composition used to prevent leakage in the longitudinal valve, and in consequence also of some slight imperfection in the longitudinal valve itself. During the cessation of its working, the defect in the valve has been remedied, and a new composition applied. This composition, it is said, will work at a temperature of upwards of 140°, while the highest temperature of the tube during the late very hot weather was about 132°. It is also stated, that the composition will work perfectly well at 20° below freezing point.

The history of the progress of the atmospheric system, up to the present power of working, is extremely interesting. It teaches us, likewise, the wisdom of receiving with much caution the theories of the most scientific men on practical subjects. Fulton was an object of mockery, even at the very moment his steam-boat moved. It was not till it had breasted the waters for some distance, that the multitude who had assembled to witness its failure were sensible of their own presumption; and just in the same way that the predicted tractive power of the locomotive was ridiculed, was the asserted capability of traction by the exhaustion of a 15-in. tube emphatically disputed, and treated with contempt by the great promoters of the locomotive system—the very men who had themselves realised to the public rates of speed, which they had been told the locomotive could not possibly be made to attain.

The atmospheric system, undoubtedly, has its advantages; its opponents assert, that it has many disadvantages. I shall not attempt to decide between the contending parties. My present object is to point out very briefly what it is now doing, and contrast its power with what it was said to be capable of performing. That it has power, the actual working that I am about to give will prove; and that it ensures steadier, more luxurious, and safer travelling than the locomotive, all will readily admit. The questions to be decided before it can be declared commercially useful for long lines, are—Can regularity of departure and arrival be secured, and is the system sufficiently economical to warrant the construction of lines on the principle? These are questions into which I shall not here attempt to enter. To deal with the one, requires much more information than I am at present in possession of; and in the other is involved the propriety, as well as the power, of maintaining a totally different system of passenger trains, and mode of accommodating the public. This is also too important a matter to be touched upon in a notice, the object of which is merely to elucidate two or three interesting facts connected with the progress of the system. In May, 1845, one of the most eminent railway engineers of the day, and himself, perhaps, the first locomotive manufacturer in the world, stated before a Parliamentary committee, that a three mile section of a 15-in. atmospheric tube would not, with a vacuum of 20 in., be equal to more than 17 miles per hour on a level with a 40 tons train. How encouraging to struggling genius that these mistakes of great men, when dealing with its inventions and discoveries, should be made public! On the 16th of May, 1845, Mr. Robert Stephenson, in his evidence before the Northumberland committee, stated that the above was the limit of the tractive capacity of a three-mile section of a 15-in. tube, with such a vacuum and such a load. I give the following extract from a transcript of the short-hand writer's notes of Mr. Stephenson's evidence, in proof of what I have stated.

"Cross-examined by Mr. Serjeant WRANGHAM.

"In point of fact you think the average rate of travelling would be 17 miles an hour?—I do not think with a three-mile pipe it would exceed that. I do not indeed.

"COMMITTEE.—Referring always to trains of 40 tons weight?—Yes.

"Mr. Serjeant WRANGHAM.—This is taking the case of a train starting after having stopped—starting from a state of rest?—No! I am supposing a train put into a tube at the end and in motion; even then, it would not maintain an average velocity over three miles of more than I have stated.

"Do you mean that if a train runs in, at say 17, that it will not do more than maintain the same velocity?—No, I do not think it will.

"I understand you, that taking a through train which never stops at all, it would travel at the rate of 17 miles an hour from Berwick to Newcastle?—It might possibly exceed that when it came near the engine; but I do not believe the average in the three-mile sections would exceed that. All my experiments here lead me to that conclusion."

Such was the emphatic opinion, I say, of one of the first railway engineers of the day. But what is the actual working of a three-mile section of 15-in. tube, with 35 tons equal to, with a vacuum not of 20 in., but considerably less? I will take the usual 9 h. 50 m. morning train from Croydon, and show what it is equal to. The train consisted of—

Three first-class carriages—4 tons 2 cwts. each	*Tons* 12	6
One third class	3	15
A third class piston and heater carriage	12	0—28 1
Passengers, 97	7	0
Total	*Tons* 35	1

The train left the Croydon platform at 9 h. 54 m. 40 s.

Mile Posts.	*Time per quarter.* h. m. s.	*Mile in Seconds.*	*Vacuum. Inches.*
Started	9 54 40	„	„
Entered tube	9 55 52	„	19½
¼	„ 56 22	„	19¾
½	„ 57 2	40	„
¾	„ „ 32	30	17½
1 } Rise 1 in 50	„ „ 56	24	„
1¼ }	„ 58 20	24	„
1½ Fall 1 in 50	„ „ 43	23	„
1¾	„ 59 3	20	„
2	„ „ 22	19	16
2¼	„ „ 41	19	15½
2½	10 0 0	19	„
2¾	„ „ 18	18	14
3	„ „ 35	17	„
3¼	„ „ 52	17	13½
3½	„ 1 10	18	„
3¾	„ „ 27	17	„
4	„ „ 43	16	12½
4¼	„ 2 0	17	„
4½	„ „ 20	20	14
Left the tube	„ „ 38	„	„
Arrived at Forest Hill	„ 2 44	24	„

It is here seen, that from platform to platform, a distance of nearly five miles, including getting up and reducing speed when departing from Croydon and arriving at the Forest-hill station, the time occupied was 8 m. 44 s., which is something like 34½ miles per hour, and that the maximum speed was 56·25 miles per hour.

The next through train, the speed of which I noted, was the 10.50 morning express train, also from Croydon. This train consisted of the same number of carriages, and of about the same weight, that were taken down to Yarmouth by the special train.

Mile Posts.	*Time per quarter.* h. m. s.	*Mile in Seconds.*	*Vacuum. Inches.*
Started	10 53 30	„	„
Entered tube	„ 54 30	„	19
¼	„ „ 56	„	18½
½	„ 55 28	32	17½
¾	„ „ 51	23	„
1	„ 56 11	20	17
1¼	„ „ 29	18	„
1½	„ „ 46	17	16
1¾	„ 57 2	16	15
2	„ „ 18	16	14½
2¼	„ „ 33	15	14
2½	„ „ 48	15	12½
2¾	„ 58 3	15	„
3	„ „ 17	14	10
3¼	„ „ 32	15	„
3½	„ „ 47	15	„
3¾	„ 59 1	14	9
4	„ „ 15	14	„
4¼	„ „ 32	17	8½
4½	„ „ 49	17	
Forest Hill	11 0 15	26	

The five miles were, in this journey, gone over in 6 m. 45 s.—that is, from platform to platform—or at the rate of 43 miles per hour; the maximum speed being 64.28 miles per hour, and the average speed for two miles out of the five about 62 miles per hour.

I will now compare the working of the atmospheric 15-in. tube with that of the 6-ft. driving-wheel engines used on the trip to Yarmouth with the 30 tons; and, in doing this, I shall adopt a mode by which the advantage is sure to be something on the side of the locomotive. In the trip to Yarmouth, the shortest distance run without stopping, was from Norwich to that place, but as I could not make out the mile posts for the first seven miles after leaving the Shoreditch station, I am compelled to reckon from the mile posts beyond the stations. Of course, it will frequently happen that the mile post is but a few yards, or nearly a mile from the station, I have, therefore, reckoned from the *second* mile post past the stations on the locomotive line, while I have reckoned from the *first* only past the atmospheric station. The speeds will then stand thus:—

Miles.	*Bishop Stortford.* sec. per m.	*Cambridge.* sec. per m.	*Brandon.* sec. per m.	*Atmospheric. 1st trip.* sec. per m.	*2d trip.* sec. per m.
1.	98	81	81	86	67
2.	100	78	83	73	59
3.	102	77	82	68	58
	3)300	3)236	3)246	3)227	3)184
	100	79	82	76	61
	36 miles per hr.	45.56 do.	43.9 do.	47.36 do.	61 do.

	Miles per hour.
Atmospheric train	61
Locomotive Yarmouth train	43
Excess of speed on atmospheric with similar load	18

It is here seen, that a train of 35 tons—viz: five tons less than the weight which Mr. Stephenson said could be taken at 17 miles per hour only, with 20 in. vacuum, was taken through a three mile section of tube with a much lower vacuum at 47·36 miles per hour, or at 30 miles per hour faster than the maximum fixed by that gentleman. The pistons of both these express trains entered the tube within two minutes after the pistons of the down trains had left it. Speed, easy motion, and superior safety, are secured by the atmospheric system, and, without going into the question of economy, I would ask, if, in addition to what has already been done in its infancy, the atmospheric system can secure regularity with almost innumerable daily trains, who will be bold enough to assign a money value to the public benefits that must, in such case, result from such a realisation.

THE STUPENDOUS TUNNEL BRIDGE ON THE HOLYHEAD RAILWAY.

At the usual half-yearly meeting of proprietors, held at the offices, on Wednesday last, the following report was read, which is of importance, as giving detailed particulars respecting the intended bridge over the Menai Straits:—

In the last report on the contract works, I particularly called your attention to the subject of the Britannia Bridge, over the Menai Straits, and to the experimental investigation which Mr. Fairbairn and Mr. Hodgkinson had undertaken, at my request, with the view of satisfactorily determining every dimension of the tubular part of the bridge.

Since that period, Mr. Hodgkinson has made several experiments, the results of which he has communicated to me verbally, and, though I am not able to submit them to you in a reduced form, I may state that I conceive them highly satisfactory, and confirmatory of those principles which led to the tubular construction of the bridge.

In addition to these experiments, Mr. Fairbairn has, with your sanction, constructed a model tube one-sixth of the actual span, having all the dimensions in due proportion.

In such a model we should, of course, expect to have a very accurate exhibition of the merits or demerits of the tubular system.

It will be in your recollection, that the preliminary experiments led to the conclusion, that great care would be required to prevent the upper side of the tube from crushing; that, in short, the main object to be aimed at, was to give the top of the tube the requisite stiffness. In this respect the results obtained from the model tube have been highly satisfactory; and being upon so large a scale, may be deemed perfectly conclusive upon several very important points. The dimensions of the tube were as follows:—

Length	75 ft., between the supports	
Depth	4 ft. 6 in.	and
Width	2 ft. 6 in.	

with the upper side constructed in compartments.

Total weight a little above 5 tons.

Thickness of the plates in the top	146 in.	(about 1-7th of an in.)
„ „ „ in the bottom	179 „	(about 1-6th of an in.)
„ „ „ at the sides	1 „	(about 1-10th of an in.)

When progressively loaded, the mean deflection was about one-tenth of an inch per ton; and with a load of 35 tons suspended in the middle, it gave way on the under side; the upper part not having exhibited the least sign of failure up to the moment of fracture.

Hence, therefore, we have arrived at a most interesting result—viz: that the liability of the plates on the upper side to crush, has been completely removed by the construction in compartments.

The experiments having now furnished us with the necessary means of calculating the relative thicknesses and proportions of the several parts of the tubes, we are now in a condition to contract at once for their construction. For this purpose, I recommend that they should be apportioned among half-a-dozen of the principal iron-ship builders, or boiler-makers, who shall undertake to deliver the same, completed in lengths, upon the works adjoining the place of erection; when the several portions forming each tube will be connected together, and the tubes fixed in their places.

In the meantime, the masonry of the bridge, the erection of workshops, the manufacture of plates, and every other necessary preparation, are in a state of progress.

The works on the Chester and Holyhead line, we learn, are rapidly progressing—so much so, that a portion will be ready for opening in the course of the summer, and it is anticipated, that by the close of 1847, the line will be so far completed, that the mails can be transmitted to Conway. This will prove a great advantage to all the towns on the route, by enabling them to receive the mails from 6 to 12 hours earlier than at present. It is not supposed that any of the Irish correspondence will be forwarded until the line is finished as far as the Menai Straits. The cuttings and tunnels through the Greater and Lesser Penmaen, which are very heavy, owing to the extreme hardness of the rock, are proceeding fast, though, from the nature of the undertaking, they will necessarily be a work of time. The loud rumbling of the blast is continually heard, whilst some hundreds of men are employed. Workmen are busily engaged, in preparing the ground on the Britannia rock, and on the shores of the Menia, for the foundation of the piers that are destined to support Mr. Stephenson's iron tunnel. The first stone will very shortly be laid. It is rumoured, that it is the intention of the Chester and Holyhead, to purchase an interest in the proposed branch line from Bangor to Carnarvon, now in the hands of a distinct party.

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